

Geographic Information System-based
Safety Analysis, Visualization, and Exploration Resource
(GIS-SAVER)
for
Engineering, Enforcement, Education, Emergency Response, and Everyone else!
(GIS-SAVER:ES)



**Iowa Department
of Transportation**

Highway Division, Engineering Bureau,
Office of Traffic and Safety

Michael Pawlovich
Michael.Pawlovich@dot.state.ia.us
(515) 239-1428
Joyce Emery
Joyce.Emery@dot.state.ia.us
(515) 239-1016

US 34

MP 4.33 to MP 11.94 and MP 11.94 to MP 20.41

Mills County

2000-2004

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SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004

District 4 requested a crash history on US 34 from milepost 4.33 to milepost 20.41 in Mills County. However, they wanted the analysis divided into two sections, one from MP 4.33 to MP 11.94 and the other from MP 11.94 to MP 20.41. They did not indicate what years of data they were interested in but the most recent 5 years available (e.g., 2000-2004) is a standard request. No query was asked for, they did not indicate which reports they wanted, nor did they request a stack; therefore, the normal reports that are requested will be run and a stack that communicates location and severity will be produced. This may be overdoing it and it might normally pay to ask.

SAVER will have to be run twice, once for each segment of roadway.

This example will assume that the user has a basic knowledge of ArcView SAVER. If a more detailed example is desired, see the Harrison County example. Some of the pictures may also be of different SAVER examples. While they might not show the same segment of roadway, the task that they are describing is the same.

Step 1: Open the SAVER Project

Start SAVER. Go to the ArcView pull-down menu and select Start SAVER.

Click Continue at the about dialog box.

Open New Map

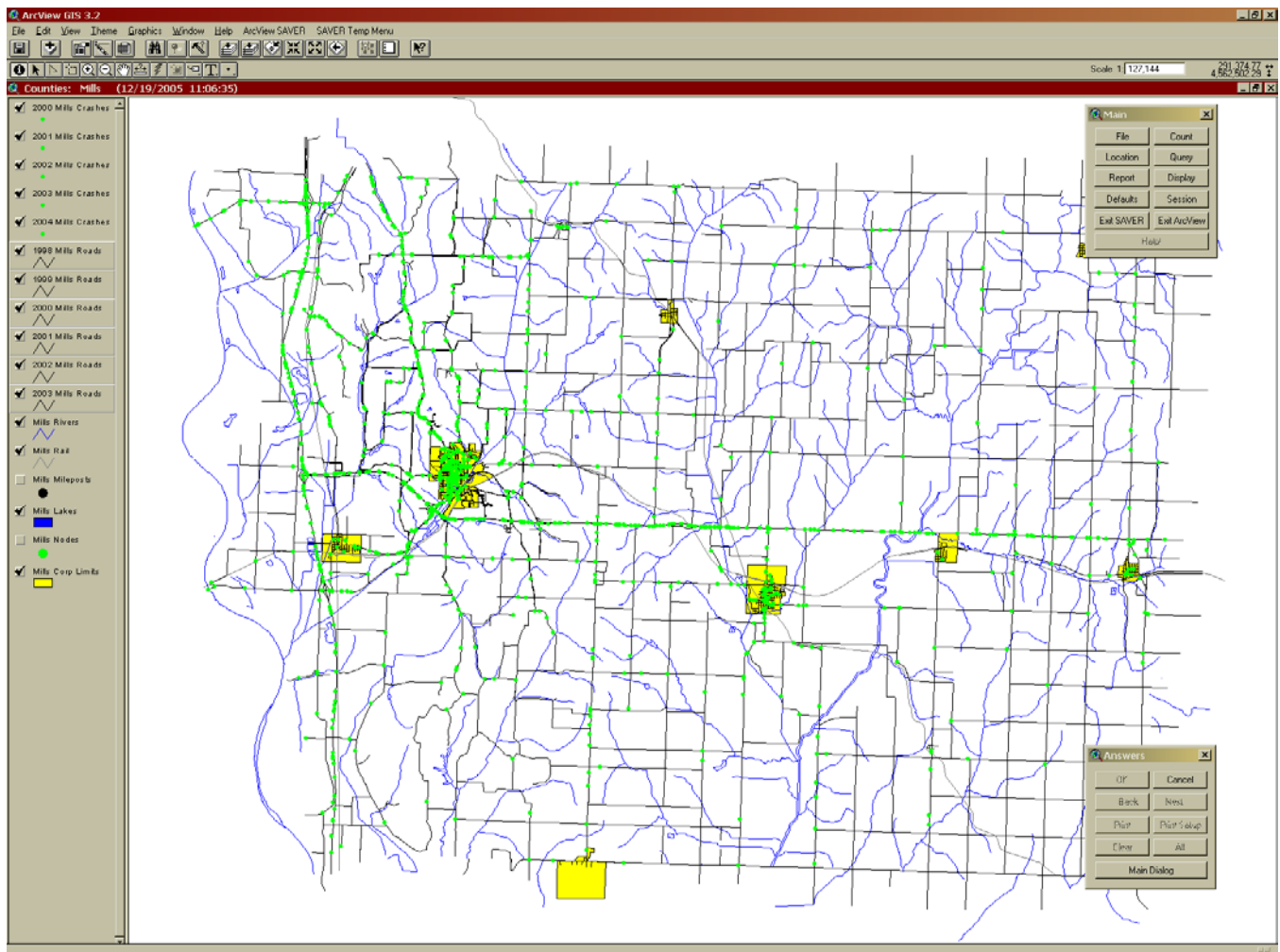
SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004

Next open up the Mills County map with the appropriate years of data(2000-2004).

To do this go to File>New>County and select Mills County. Click Next. Select the appropriate years (2000-2004 in this case) and click next.

You should see something similar to the following picture.



Find Location

SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004

If you are unsure where the section of road is located in Mills County, you can use the Query Builder tool button to find it.



Query Builder

1998 Mills Roads

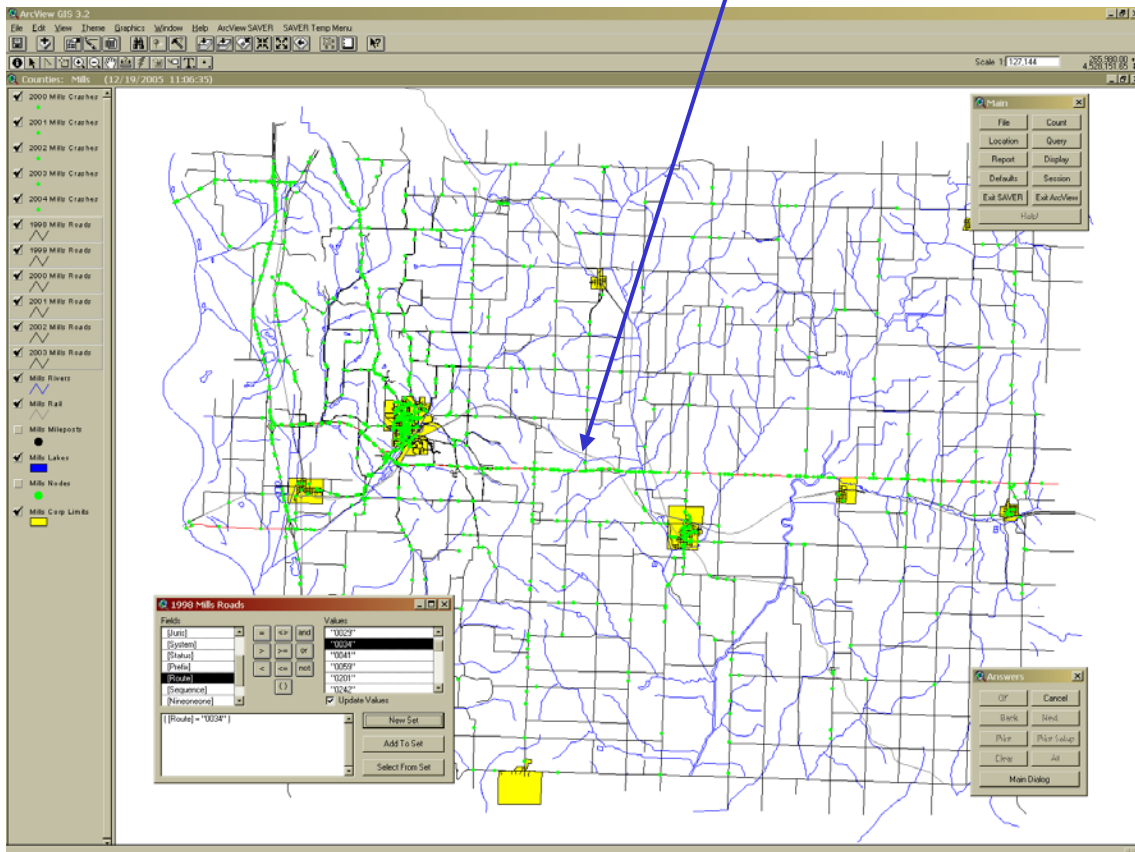
Fields: [Juris], [System], [Status], [Prefix], [Route], [Sequence], [Nineoneone]

Values: "0029", "0034", "0041", "0059", "0201", "0242"

☒ Update Values

Query: ([Route] = "0034")

Buttons: New Set, Add To Set, Select From Set

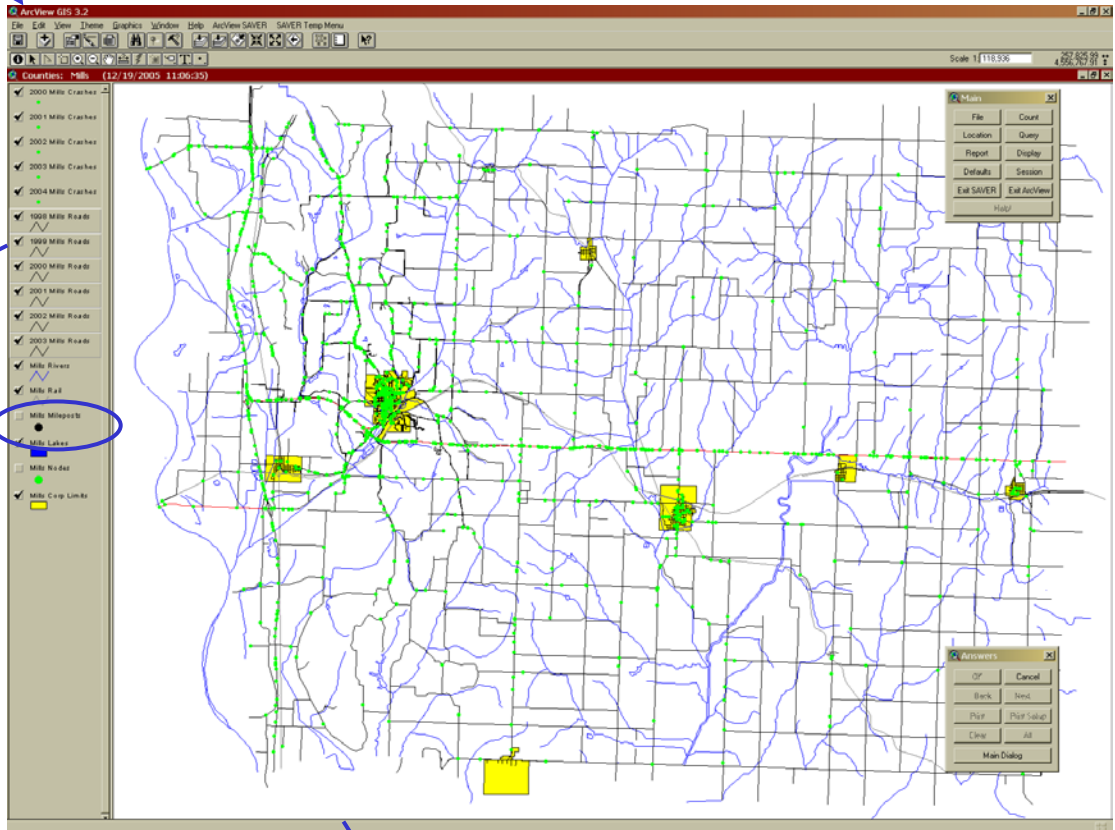


SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004



Click the **Zoom to Selected Features of Active Themes** button.



Set the active theme to be mileposts and make visible.

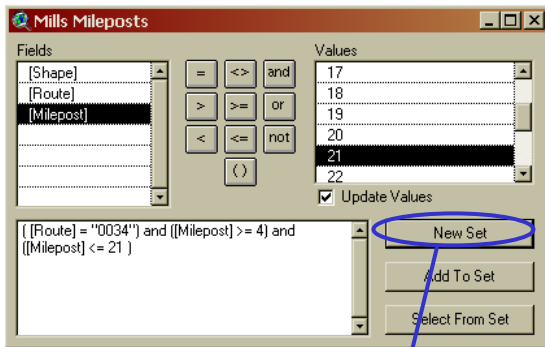
You will be querying the mileposts.



Construct the query.
(see Note on next page)

SAVER Example

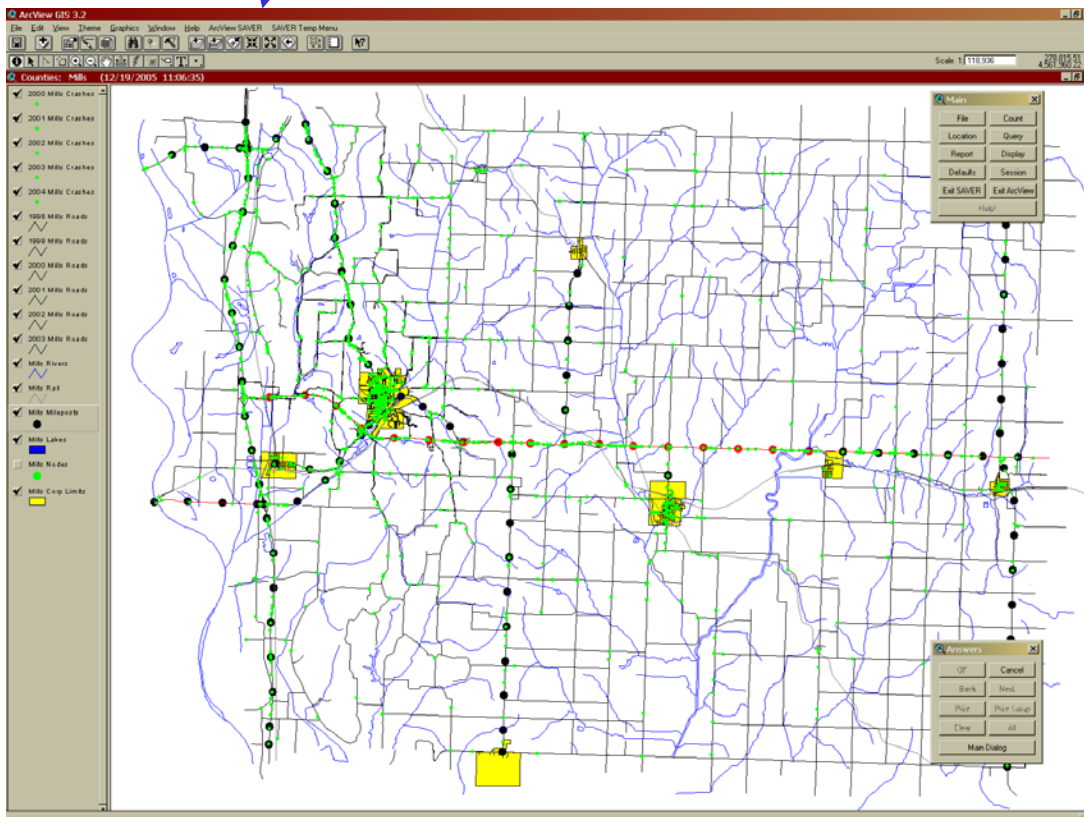
US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004



Click New Set.

Note: Double-click on Route, then single-click on the “=” (equals) button, then double-click on the proper value for the route → 0034. Single-click the “and” button. Another set of parentheses will appear with the cursor blinking between them. Double-click on Milepost, then single-click on the “>=” button, then double-click on the milepost to the lower side of the desired length → 4. Single-click the “and” button. Another set of parentheses will appear with the cursor blinking between them. Double-click on Milepost, then single-click on the “<=” button, then double-click on the milepost to the higher side of the desired length → 21. The query formed should be ([Route] = “0034”) and ([Milepost] >= 4) and ([Milepost] <= 21). It is important that the syntax is exactly this.

In some cases the values don’t appear. If not, type the values as either numbers or strings, as indicated.



Next step: Use the info tool to determine which is MP 4 and which is MP 21.

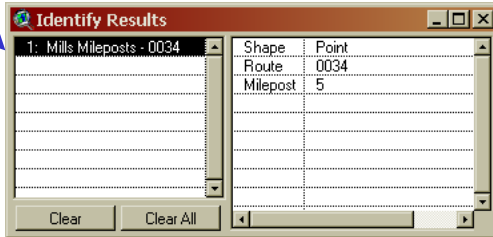
SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004

Note: The only reason you're placing these points is to help in visualization of the end points. If you don't need this information, you may skip this step and progress to the next.



Click the Info tool button. Then click on a milepost on the map.



A listing of the attributes for the features clicked on from the active themes will appear.

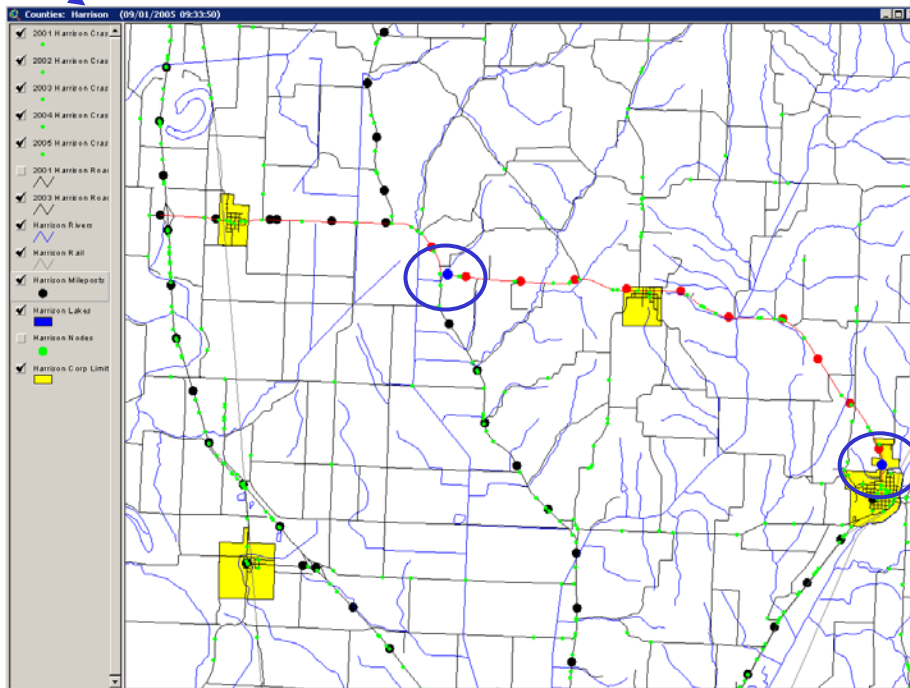
Determine what the mileposts on either end of the project zone are. One should be MP 5, the other should be MP 21. There is no MP 4.



Click the Measure tool button. Click in the center of MP 5, release, drag the mouse down the roadway, click each time you wish to establish another vertice. The individual segment length and the total line length are shown in the lower left of the ArcView window. Progress until 0.67 miles are indicated (1-0.33). Double-click to end. Remember the point for the next step. BTW...the degree of accuracy you go to is defined by how well you follow the road. In this case, accuracy is not so important as no crashes are near the point. Other times, accuracy will be more important!!!



Click the Draw Point tool button. Then click at the location just determined (i.e., the MP 4.33 point).



Finally, crash selection!

Repeat the measuring and point placement for MP 11.94 and 20.41.

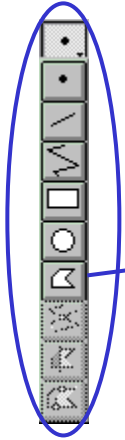
Select Crashes

SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004



First, click the Zoom to Selected Features of Active Themes button.
This should zoom the map in to the area of most concern.

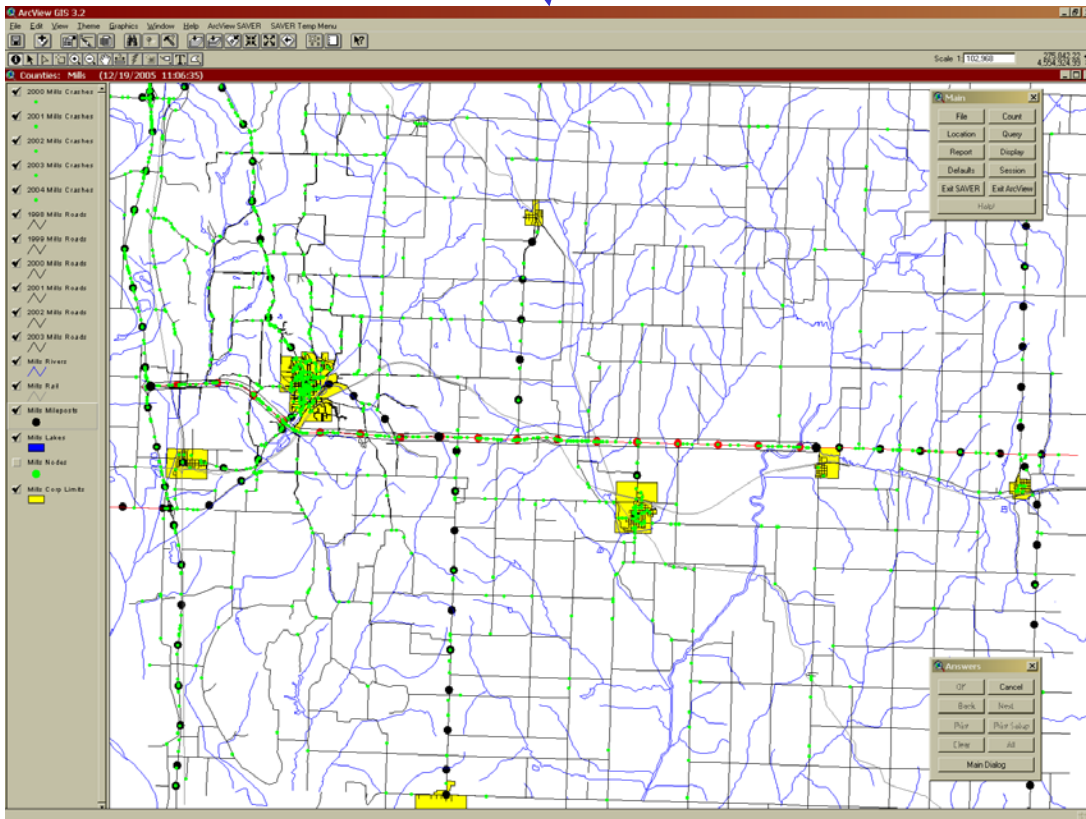


Then, click and hold on the Draw Point tool
button. Other shape options will appear.

Click the Draw
Polygon option



Begin drawing Polygons which encircle the area. You may draw multiple Polygons. To draw a polygon, single-click on the map at the start point, then move the mouse to the next vertex, single-click. Keep doing this until you have defined all corners of the polygon. As you do this, a polygon will be displayed, use it for visualization. Proceed along one side of the road, cross, then return along the other side of the road. Double-click to end the polygon.



Draw sufficient polygons to define the entire area.

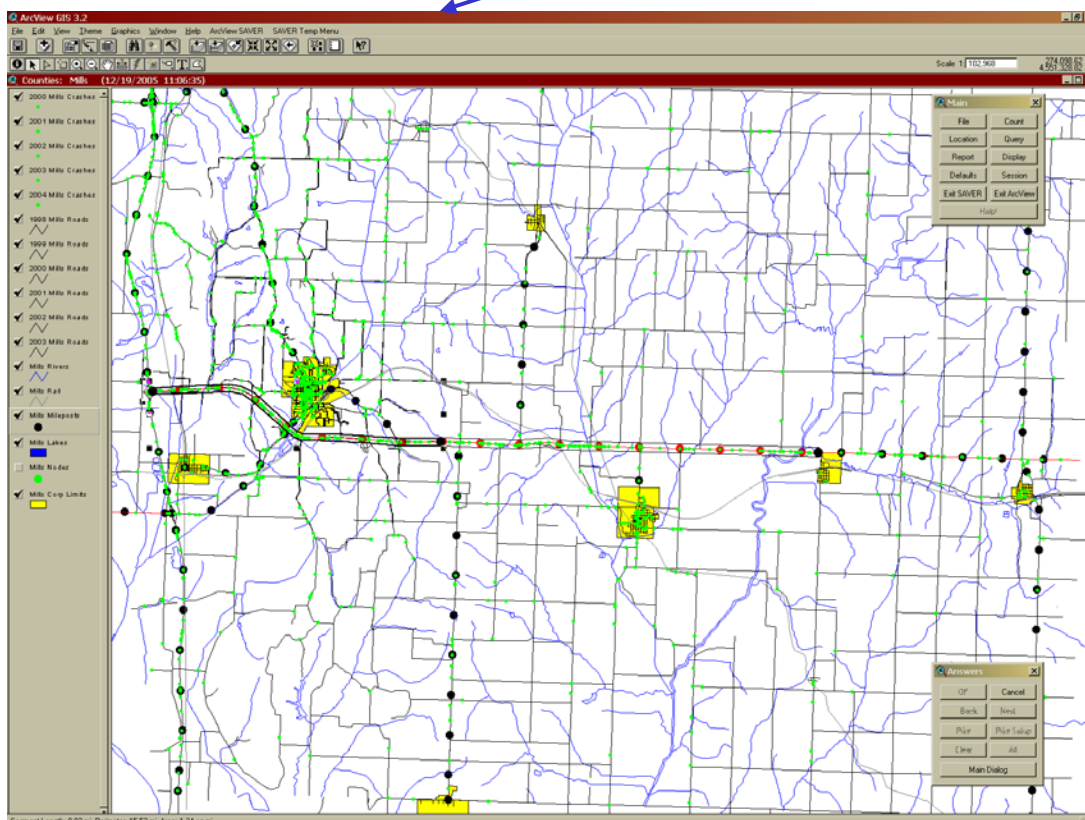
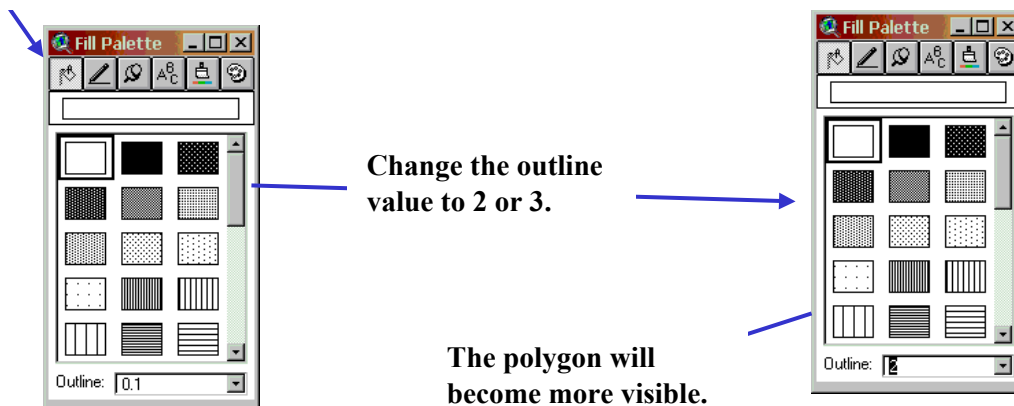
For display purposes,
you can thicken the
perimeter.

SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004



First, we need to select a graphic to thicken. Click the Pointer tool button, move to the perimeter of the graphic and click. The graphic should have selection boxes appear at its “virtual” extent. Now, double-click on the edge of the polygon. The Fill Palette window should appear.



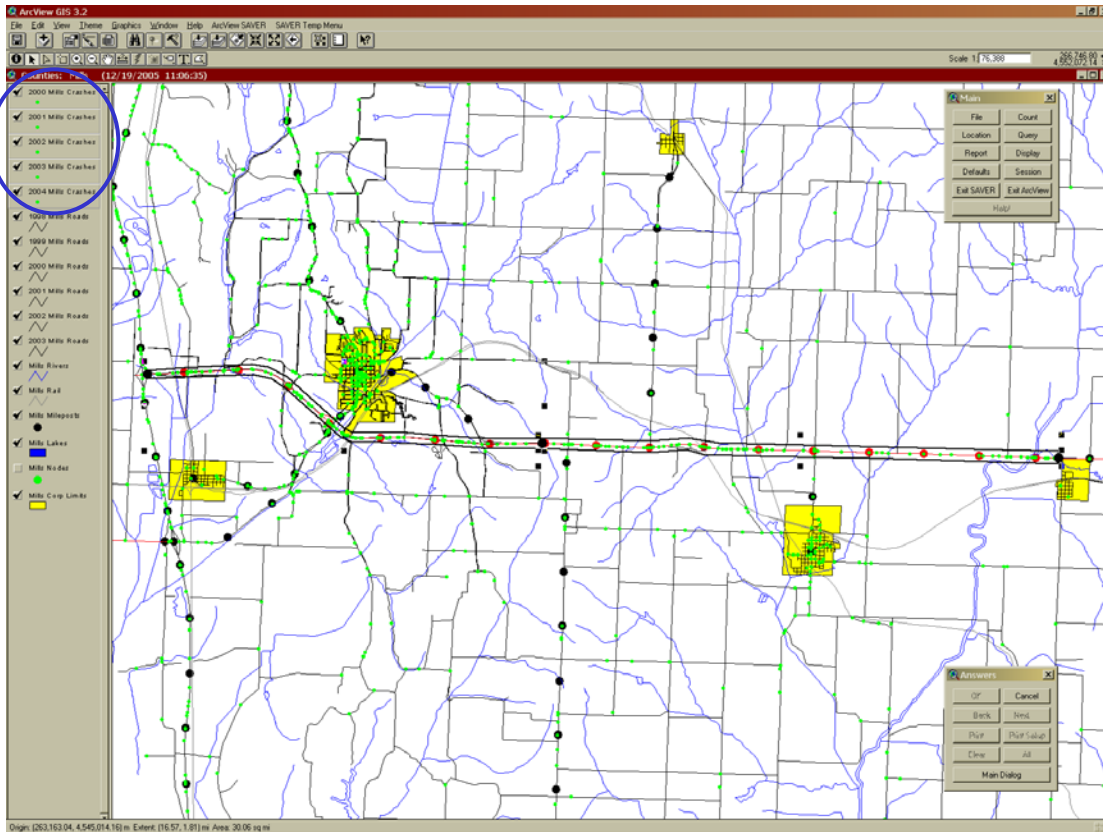
Repeat this for all polygons.

When done, draw a large box that encompasses all polygons for one of the segments. This will select all of the polygons for that section of roadway. This will need to be repeated for the other section of roadway after the crash reports are run for this section of roadway. Set the crash themes active.

SAVER Example

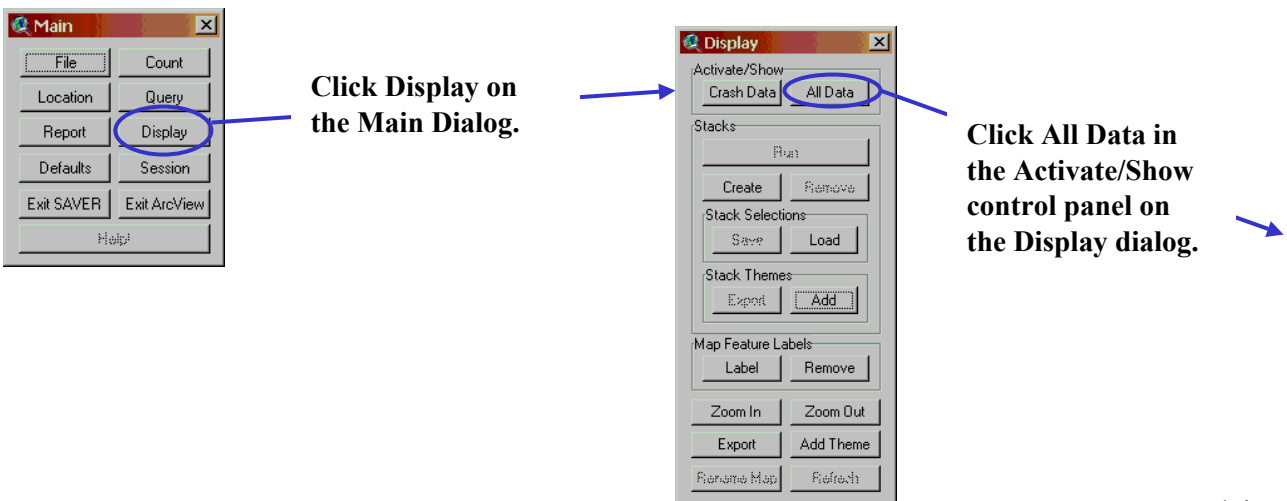
US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004

To set the crash themes active, as shown in the figure below, there are multiple options.



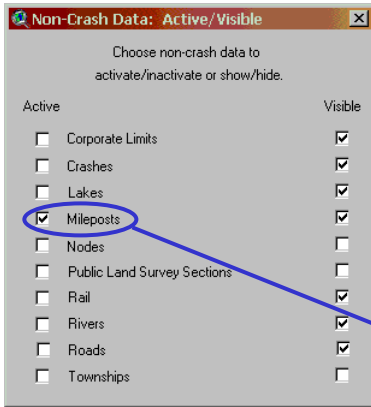
One option is to click on the theme names, holding the Shift Key down to select multiple. This is the easiest option if only one or two counties are open. If more than that are open, shift clicking will have to be done numerous times.

Alternatively, you can use the following procedure to set multiple counties active simultaneously.



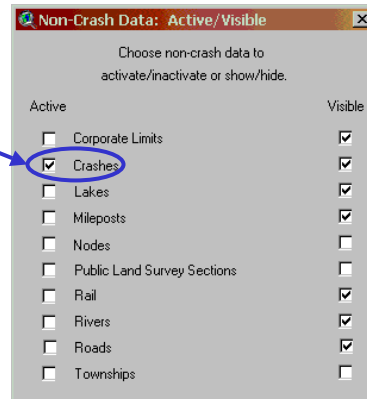
SAVER Example

US 34, MP 4.33 to MP 20.41,
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A dialog that displays the current activation and visibility settings for each theme type appears.

Change the choice from Mileposts to Crashes.

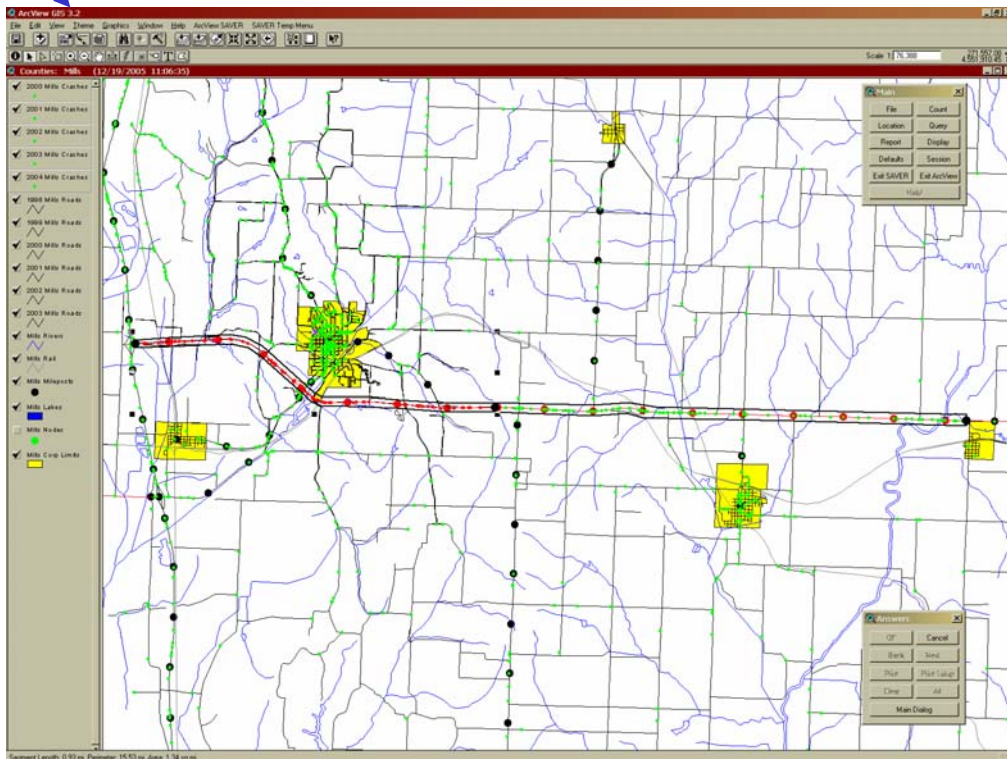


Clicking next after the change has been made will cause all crash themes to become active and all other themes to become inactive.



Select Features Using Graphic

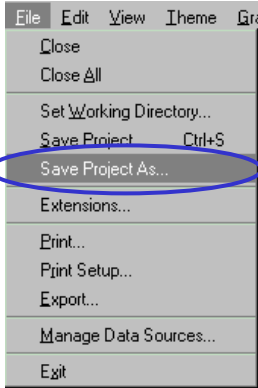
Clicking on the Select Features Using Graphic button while the graphic(s) are selected and the crash themes are active will result in the selection of crashes within or touching the graphic(s).



Save Project

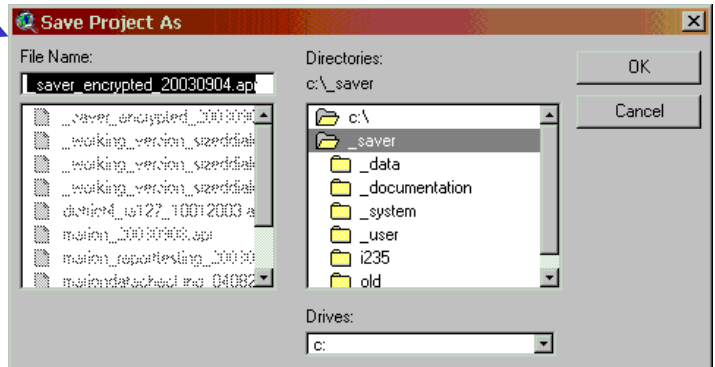
SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004



Periodically saving your work is a good idea. Occasionally, something will cause ArcView to shut down. If you haven't saved, your work will be wasted. To save an ArcView SAVER project, locate the File menu in the upper left of the ArcView window. Click on File and the menu will expand.

Click on Save Project As...

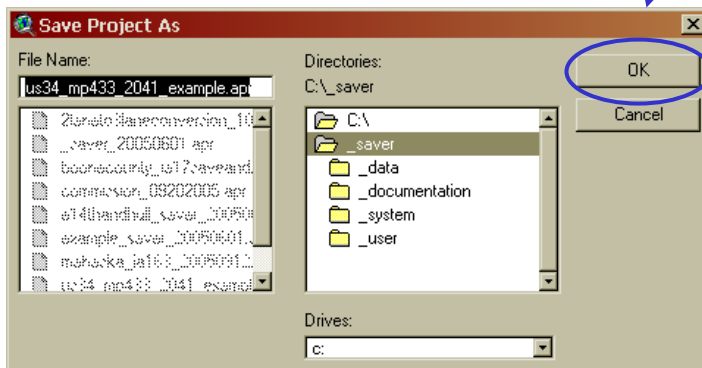


The Save Project As dialog appears with the name of the SAVER project visible and highlighted. Type in some other name which describes your current project. Updating the date may help you recall, months from now, what the project was.

Note: Clicking Save Project from the File menu or leaving the file name the same will overwrite the SAVER project. This will cause the current views, tables, etc. in the project to open the next time you open SAVER.

Note: Please only save the projects within the _saver directory. Saving them somewhere else could cause problems.

For this example, type in "us34_mp433_2041_<date>", where <date> is the current day's date.



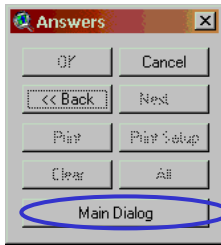
When finished, Click OK and the project will save.

Note: To open this project later, first open the SAVER project, then choose the File menu, click on Open Project (available when the project window within ArcView is active), and locate your project file.

Count Crash Frequencies, Severities, and Injuries

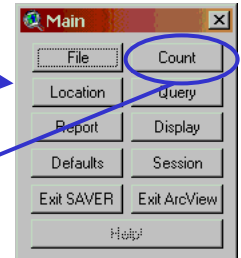
SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004



A quick report of crash frequencies, crash severities, and injury severities may be obtained.

If not already at the Main dialog, go there. To do this easily, click on the Main Dialog button on the Answers dialog.



Click the Count button.

Enter location description:

First Line:
e.g., "1996-2000 Crash History" or "1996-2000 Animal-Related Crashes"

Second Line:
e.g., "for the intersection of" or "for the link between"

Third Line:
e.g., "US 218 and 250th Ave" or "US 30 between Colo and State Center"

Fourth Line:
e.g., "in Bremer Co., Iowa" or "[Fatal and Injury Crashes]"

Note: None of these lines are required. Suggestions are provided below each line.

Enter a description. Suggestions are made. This step is optional but advised.

Enter location description:

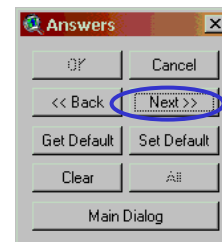
First Line:
e.g., "1996-2000 Crash History" or "1996-2000 Animal-Related Crashes"

Second Line:
e.g., "for the intersection of" or "for the link between"

Third Line:
e.g., "US 218 and 250th Ave" or "US 30 between Colo and State Center"

Fourth Line:
e.g., "in Bremer Co., Iowa" or "[Fatal and Injury Crashes]"

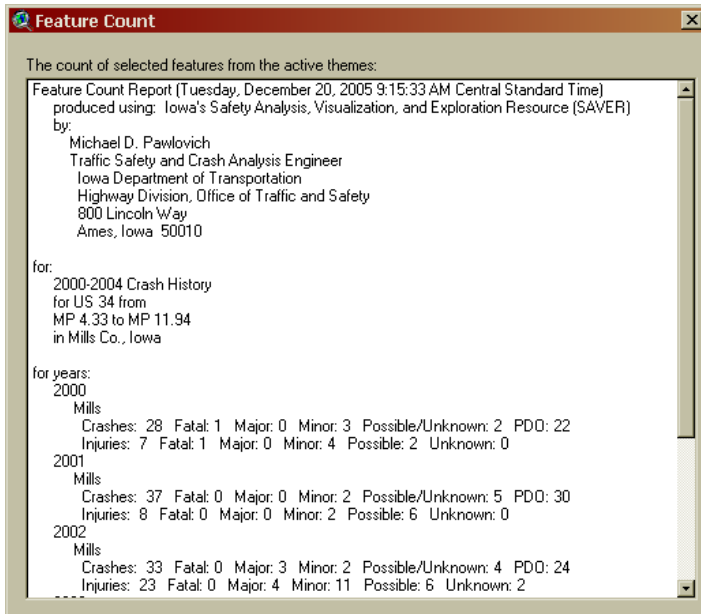
Note: None of these lines are required. Suggestions are provided below each line.



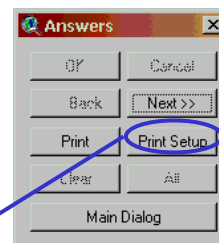
Click Next.

SAVER Example

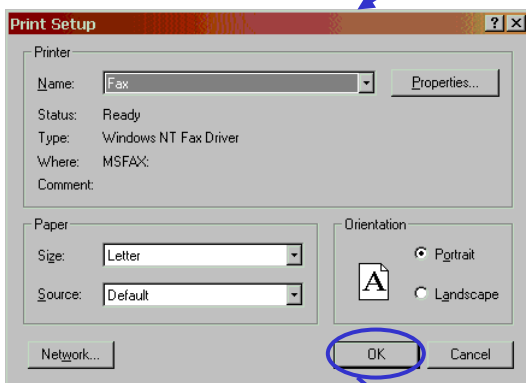
US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004



After a bit of computer time, a Feature Count report appears. This report shows the date and time of creation, which program was used, the analyst contact information, the location, and a year by year, county by county breakdown of the crash history. A total for all years and all counties is shown at the bottom.

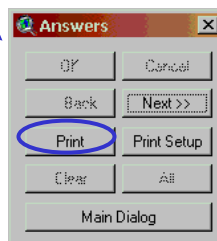


To print this using ArcView's limited print options, first click the Print Setup button on the Answers dialog. The print setup should direct you to the default printer for your computer. Change whatever needs changing.



Note: ArcView's print options are fairly limited and subject to changes in screen resolution. An alternate option, presented on the next page is to copy and paste the text from the Feature Count report into a word processor (e.g., Word). This allows the analyst more printing and formatting options.

Click OK.

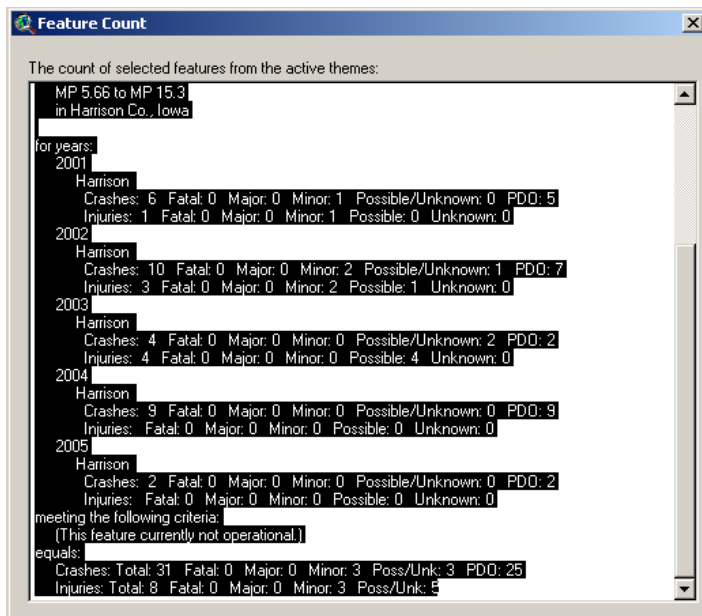


Click Print.

OR

SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004



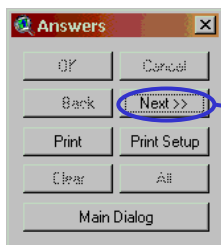
To utilize an optional printing method, begin by highlighting the entire text within the Feature Count report.

To copy the highlighted text, hold down the CTRL key on the keyboard and depress the C key. This copies the text into the computer's clipboard.

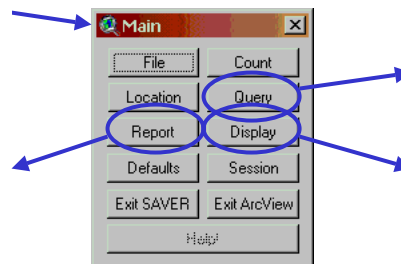


Open your word processor (e.g., Word) and either use the Edit > Paste option (available via the menu or with a right click on the mouse) or hold down the CTRL key and depress the V key. This pastes the text into the active window.

Reformatting, saving, printing, and other options are now available via the word processor.



When done, click the Next >> button to return to the Main dialog.



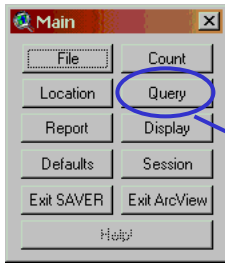
Now, options like Querying, Reporting, or altering the map Display are available to you. Each of these is optional.

Actually, the Count option was optional as well.

Queries and Reports

SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004



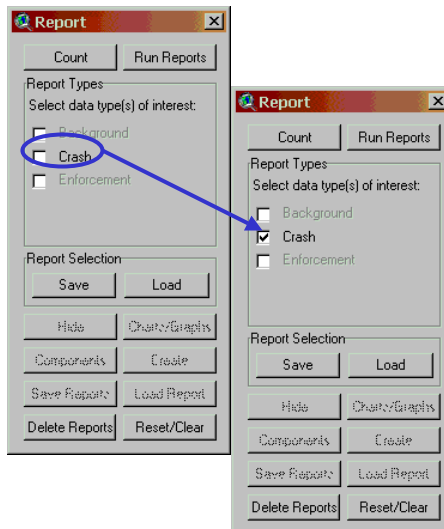
To begin a query, begin at the Main dialog and click the Query button. However, as this was not requested, this step can be skipped. All possible crash attribute values are included by default. Querying limits these values to selected choices.

Not requested.

To begin a report, begin at the Main dialog and click the Report button. Reports list a variety of details or summarizations of the data, depending on user selections.

Click Report in the
Main dialog box.

Select Crash.

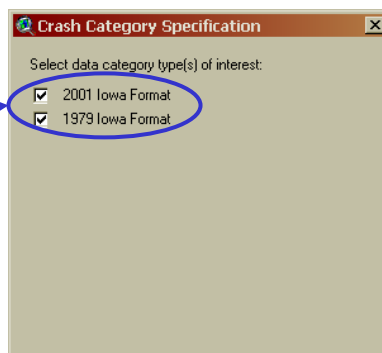


Click Next in the
Answers dialog box.

SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004

Select the appropriate crash report form(s). 1979 Iowa Format is valid from 1979 thru 2000. 2001 Iowa Format is valid from 2001 thru 2005. Since data is desired that is both older and newer than 2001, both report forms should be selected. The reports for each format ARE different.

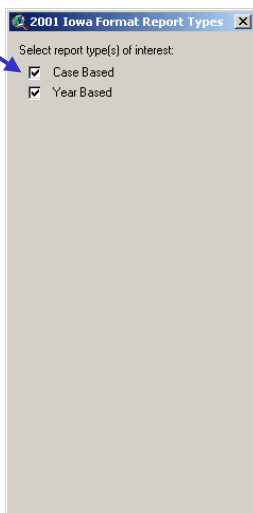


Click Next in the
Answers dialog box.

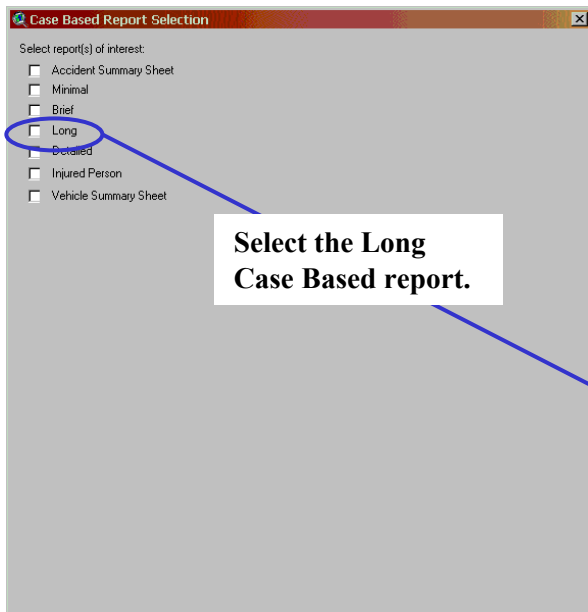


Select the report type(s) of interest. Case Based reports list a variety of details about each case, depending on which Case Based report is selected. Year Based reports summarize a particular attribute by year. These reports list the number of crashes with the attribute included and report crash severity and injury severity information.

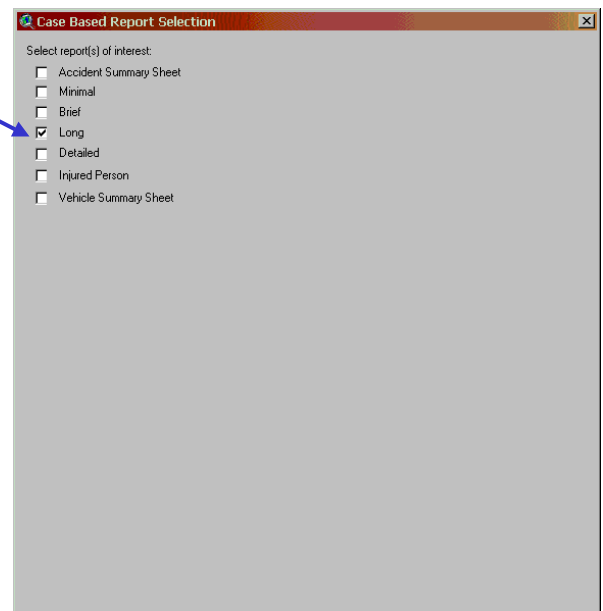
Select both types of reports. You will need to do this for both the 1979 and 2001 Formats.



Click Next in the
Answers dialog box.



Case Based reports list different amounts of information and this is somewhat indicated by their names. Minimal reports list the least information and Detailed reports list the most. Brief and long list an amount of information between these two. The other reports are used for specific cases within the Iowa DOT Office of Traffic and Safety (TAS).



Click Next in the Answers dialog box.

SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004

2001 Reports

Year Based Report Selection

Select report(s) of interest:

- ☐ Contributing Circumstances (Driver 1st)
- ☐ Contributing Circumstances (Driver 2nd)
- ☐ Contributing Circumstances (Environment)
- ☐ Contributing Circumstances (Roadway)
- ☐ Day of Week
- ☐ Driver Condition
- ☐ First Harmful Event
- ☐ Injured Age
- ☐ Light Conditions
- ☐ Location of First Harmful Event
- ☐ Major Cause
- ☐ Manner of Crash/Collision
- ☐ Month
- ☐ Most Harmful Event
- ☐ Non-Motorist Type
- ☐ Seating Position
- ☐ Surface Conditions
- ☐ Vehicle Configuration
- ☐ Weather Conditions

Select the indicated Year Based reports.

Year Based reports summarize specific types of attributes. These types are indicated by the names. Select the indicated Year Based reports. Select whatever reports are deemed necessary for the location.

Year Based Report Selection

Select report(s) of interest:

- ☒ Contributing Circumstances (Driver 1st)
- ☒ Contributing Circumstances (Driver 2nd)
- ☒ Contributing Circumstances (Environment)
- ☒ Contributing Circumstances (Roadway)
- ☒ Day of Week
- ☒ Driver Condition
- ☒ First Harmful Event
- ☒ Injured Age
- ☒ Light Conditions
- ☒ Location of First Harmful Event
- ☒ Major Cause
- ☒ Manner of Crash/Collision
- ☒ Month
- ☒ Most Harmful Event
- ☒ Non-Motorist Type
- ☒ Seating Position
- ☒ Surface Conditions
- ☒ Vehicle Configuration
- ☒ Weather Conditions

Select the indicated Year Based reports.

1979 Reports

Year Based Report Selection

Select report(s) of interest:

- ☐ Accident Type
- ☐ Collision Type
- ☐ Day of Week
- ☐ Driver Age
- ☐ Driver Condition
- ☐ Driver Gender
- ☐ Fixed Object Struck
- ☐ Injured Age
- ☐ Injured Gender
- ☐ Injury Severity
- ☐ Intersection Class
- ☐ Light Conditions
- ☐ Major Cause
- ☐ Month
- ☐ Road Class
- ☐ Roadway Characteristics
- ☐ Rural/Urban
- ☐ Speed Limit
- ☐ Surface Conditions
- ☐ Traffic Controls
- ☐ Traffic Flow
- ☐ Trafficway Type
- ☐ Vehicle Action
- ☐ Vehicle Type
- ☐ Weather Conditions

Select the indicated Year Based reports.

Year Based Report Selection

Select report(s) of interest:

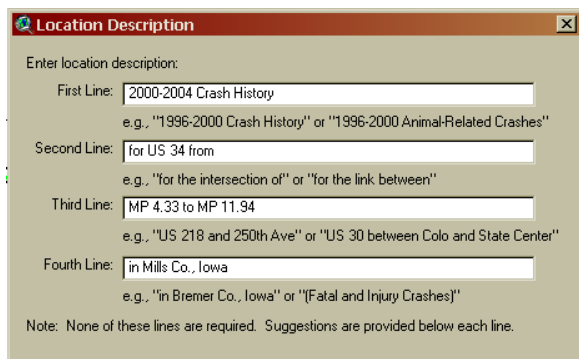
- ☒ Accident Type
- ☒ Collision Type
- ☒ Day of Week
- ☒ Driver Age
- ☒ Driver Condition
- ☒ Driver Gender
- ☒ Fixed Object Struck
- ☒ Injured Age
- ☒ Injured Gender
- ☒ Injury Severity
- ☒ Intersection Class
- ☒ Light Conditions
- ☒ Major Cause
- ☒ Month
- ☒ Road Class
- ☒ Roadway Characteristics
- ☒ Rural/Urban
- ☒ Speed Limit
- ☒ Surface Conditions
- ☒ Traffic Controls
- ☒ Traffic Flow
- ☒ Trafficway Type
- ☒ Vehicle Action
- ☒ Vehicle Type
- ☒ Weather Conditions

Select the indicated Year Based reports.

Click Next in the
Answers dialog box.

SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004



Location Description

Enter location description:

First Line: 2000-2004 Crash History
e.g., "1996-2000 Crash History" or "1996-2000 Animal-Related Crashes"

Second Line: for US 34 from
e.g., "for the intersection of" or "for the link between"

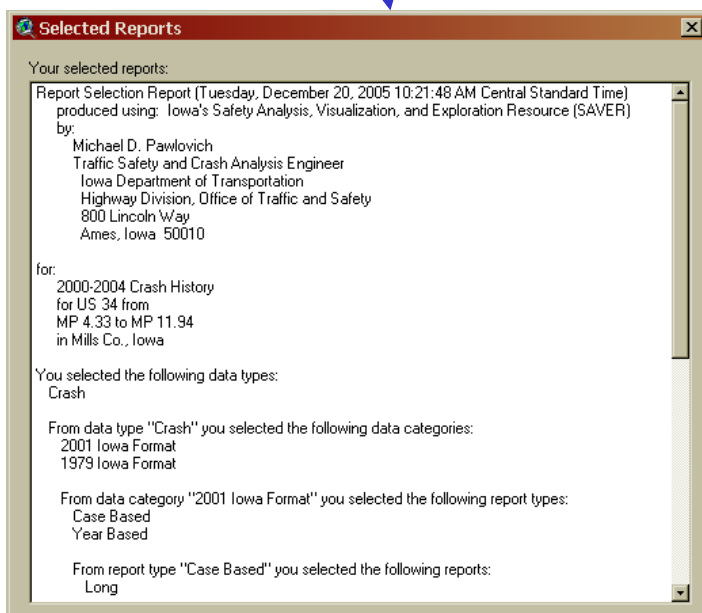
Third Line: MP 4.33 to MP 11.94
e.g., "US 218 and 250th Ave" or "US 30 between Colo and State Center"

Fourth Line: in Mills Co., Iowa
e.g., "in Bremer Co., Iowa" or "[Fatal and Injury Crashes]"

Note: None of these lines are required. Suggestions are provided below each line.

Following selection of the reports, the **Location Description** dialog appears again. The previous description should appear as well. Change it if you want.

Click Next in the
Answers dialog box.



Selected Reports

Your selected reports:

Report Selection Report (Tuesday, December 20, 2005 10:21:48 AM Central Standard Time)
produced using: Iowa's Safety Analysis, Visualization, and Exploration Resource (SAVER)
by:
Michael D. Pawlovich
Traffic Safety and Crash Analysis Engineer
Iowa Department of Transportation
Highway Division, Office of Traffic and Safety
800 Lincoln Way
Ames, Iowa 50010

for:
2000-2004 Crash History
for US 34 from
MP 4.33 to MP 11.94
in Mills Co., Iowa

You selected the following data types:
Crash

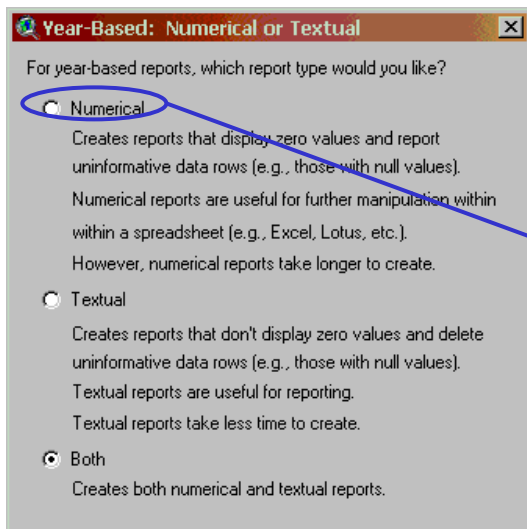
From data type "Crash" you selected the following data categories:
2001 Iowa Format
1979 Iowa Format

From data category "2001 Iowa Format" you selected the following report types:
Case Based
Year Based

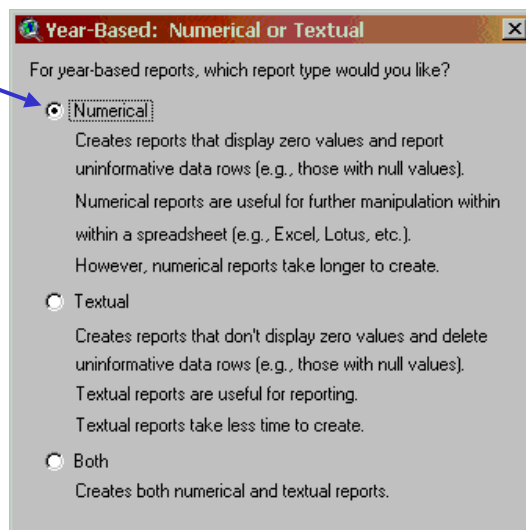
From report type "Case Based" you selected the following reports:
Long

A report detailing your **Selected Reports** appears. You may print this, save it, or not. Review it. It should list the reports you selected.

Click Next in the
Answers dialog box.



A dialog asking what type of Year Based report you wish appears. The only choice should be Numerical. If not, select Numerical.



**Click Next in the
Answers dialog box.**

The time these reports take to be developed depends on the number of active crash themes (i.e., number of years and number of counties), number of selected crashes, and number of reports selected. This is something that individual users will have to gain experience with as the report development time also depends on computer-specific capabilities (i.e., processor speed and available memory).

Each individual report will appear in the upper left, be developed, and its window hidden finished. The reports run in the order selected. The process is finished when the last report is hidden and no new report appears. Case Based reports will fill in as development is ongoing. Year Based reports will remain blank until the final write stage. If the progress bar is moving (or flashing very rapidly, depending on the things listed above) then SAVER is still running the reports.

Crash_Key	CaseNumber	County	Acc_Type
1996015255	6017098	Harrison	Collision: Animal
1996019585	6022046	Harrison	Collision: Vehicle in Tra
1996019585	6022046		
1996031119	6035154	Harrison	Collision: Vehicle in Tra
1996031119	6035154		
1996031119	6035154		
1996031119	6035154		
1996042930	6048586	Harrison	Collision: Animal
1996073873	6083563	Harrison	Collision: Animal
1997028216	7034898	Harrison	Collision: Animal
1997047350	7059484	Harrison	Collision: Animal
1997070711	7087987	Harrison	Collision: Vehicle in Tra

A case-based report lists many details of each crash in word form (as opposed to code form). The first column, **Crash_Key**, is an internal SAVER number and is assigned arbitrarily. The **CaseNumber** column is the case number assigned by the Iowa Department of Transportation (Iowa DOT). Additional details will include some crash-wide statistics (e.g., date, time, severity, collision type, major cause, etc.), vehicle statistics (type, action, damage, etc.), driver statistics (age, gender, condition, contributing circumstances, etc.), and injury statistics (age, gender, severity, restraint use, etc.). The number of additional details is defined by the case-based report chosen. The “minimal” report has sparse details, mostly limited to crash-wide statistics. The “brief” report adds vehicle and driver statistics. The “long” report adds further vehicle and driver statistics and some injury details. The “detailed” report has most typically interesting details about a crash.

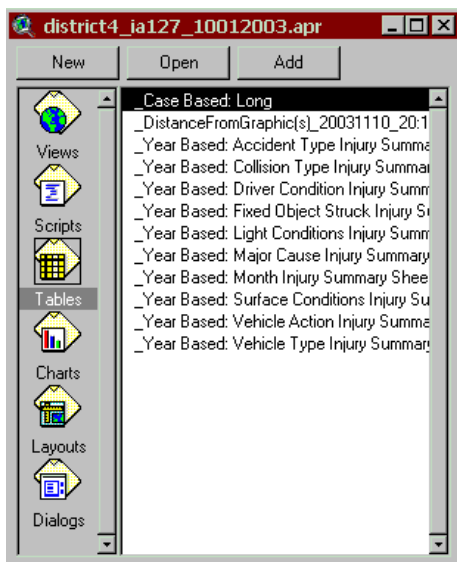
A year-based report provides counts of crash severities and injury severities pertaining to each value of a given crash variable by year. For example, if Accident Type were chosen, each value of Accident Type (e.g., Collision: Vehicle in Traffic, Collision: Train, etc.) has the number of total, fatal, injury, and PDO crashes reported. Additionally, the number of total, fatal, major, minor, possible, and unknown injuries are reported. This is done for each year of data active on the map. Therefore, if 2000-2004 data were active, the report would show details for each value of Accident Type for each year.

For year-based reports, Excel templates have been developed to enable simplified summarization (e.g., a 5-year summary) and standardized display and print capability. This will be explained in a few pages.

Year	Acc_Type	TotalCrash	FatalCrash	InjCrash
1996	Non-Collision: Overturned in R			
	Non-Collision: Jackknifed			
	Non-Collision: Carbon Monoxid			
	Non-Collision: Fire/Explosion			
	Non-Collision: Immersion			
	Non-Collision: Other			
	Collision: Pedestrian			
	Collision: Vehicle in Traffic	2		2
	Collision: Motorcycle in Traffic			
	Collision: Vehicle in Other Roa			
	Collision: Parked Vehicle			
	Collision: Train			

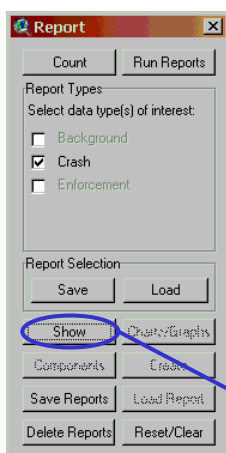
SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004



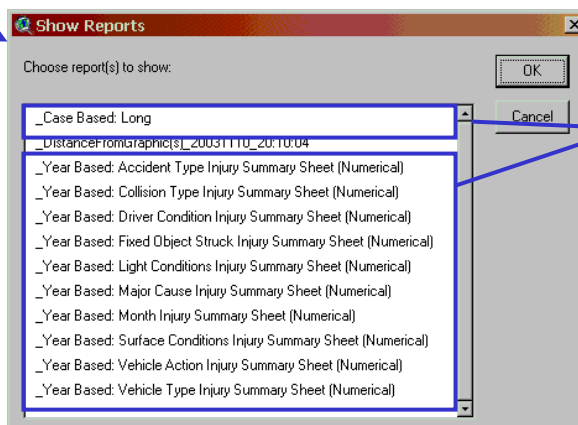
Once the selected reports have finished running, you will be returned to the Report Dialog.

The report windows will have been closed but they are still available within SAVER in two ways. The first is through the Project Window, which is shown to the left. Using the project window and highlighting the Tables icon, as shown, you can choose any of the reports individually and open them by double-clicking. This is the way to do it using ArcView's normal capabilities.



Alternatively, you can show the reports by clicking the show button on the Report Dialog. This is the way to do it using SAVER.

Click
Show.

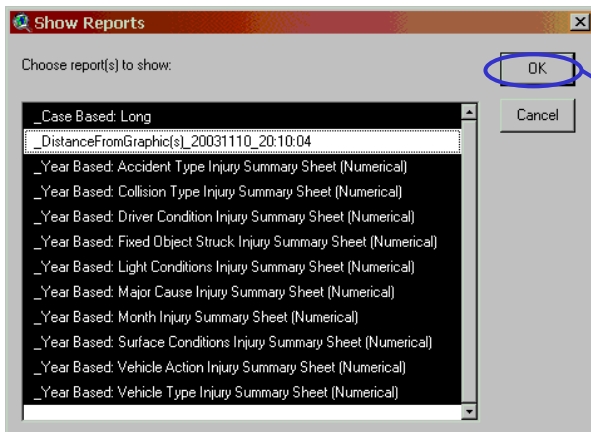


Highlight the
reports of
interest.

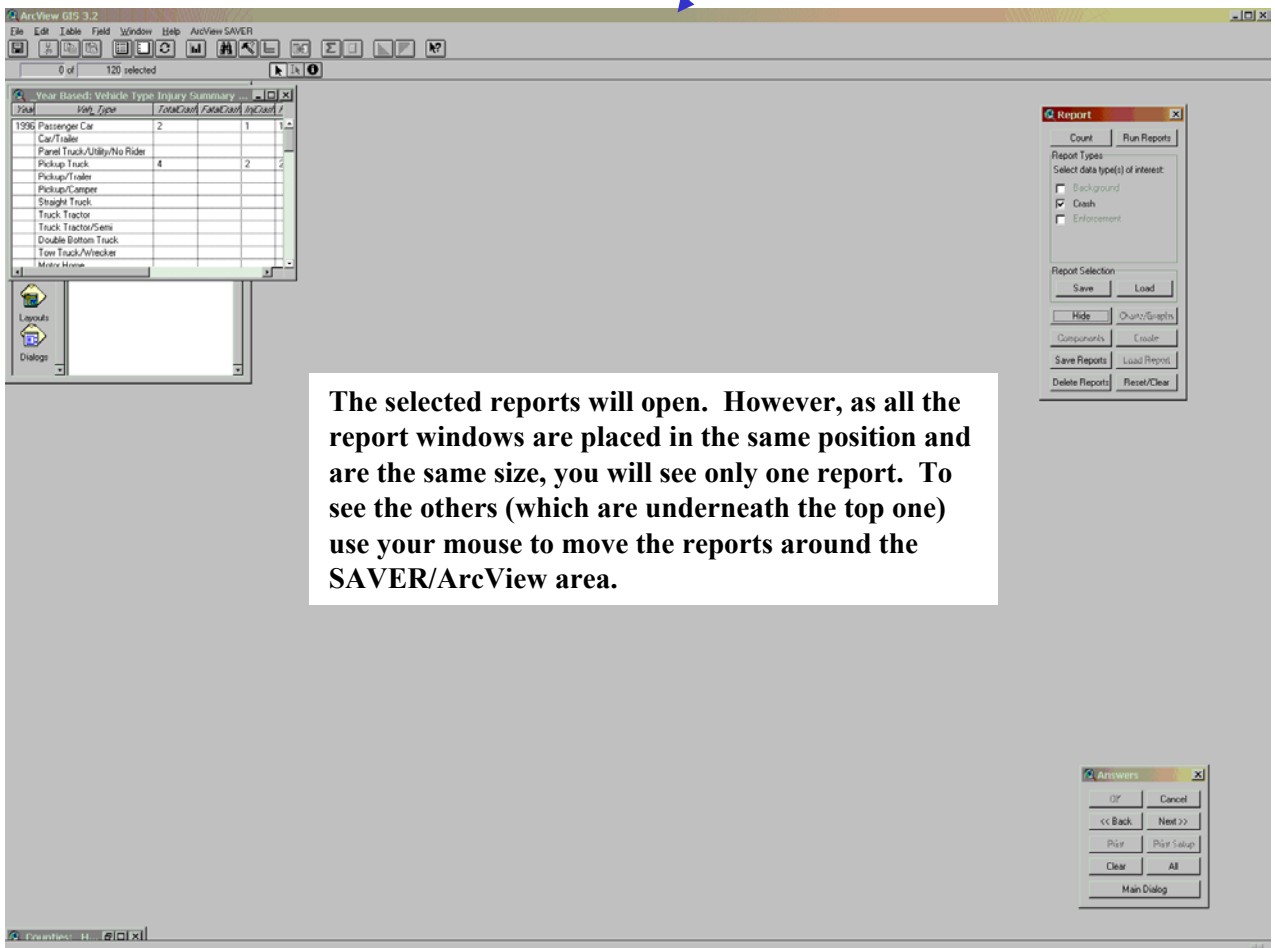
A list of the available reports (i.e., those you have created) appears. To highlight those you are interested in, click on the first, then hold the Shift key and select the rest. This selection is a toggle selection; therefore, if you select one accidentally, just click on it again and it will be unselected.

SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004

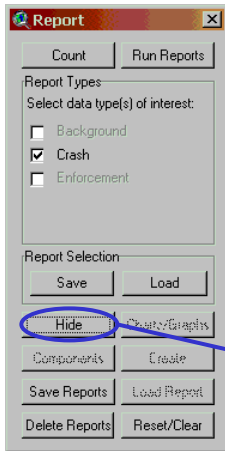


Click OK.



SAVER Example

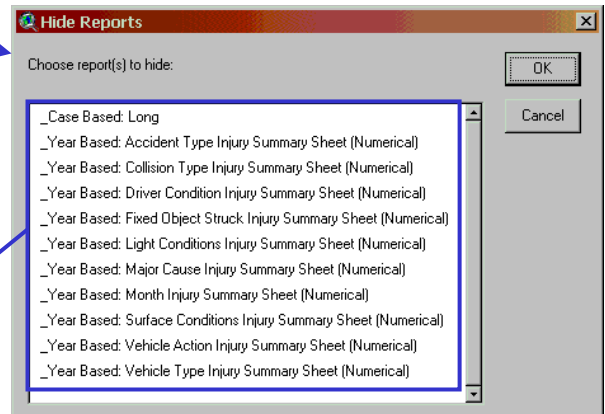
US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004



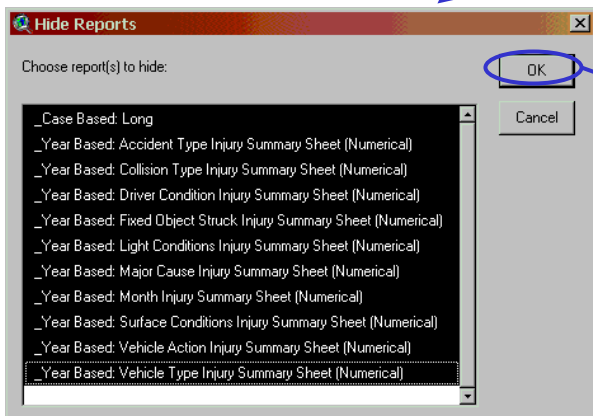
To close the report windows, you can click on the “X” in the upper right of the windows. This is the Windows or ArcView method of closing the windows.

Alternatively, you can click on the Hide button on the Report Dialog. The Hide button had previously been the Show button but when you clicked on it, it toggled to the Hide button.

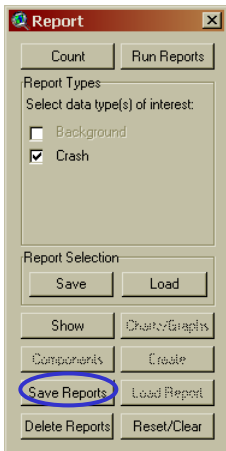
Click Hide.



Select reports
to Hide.

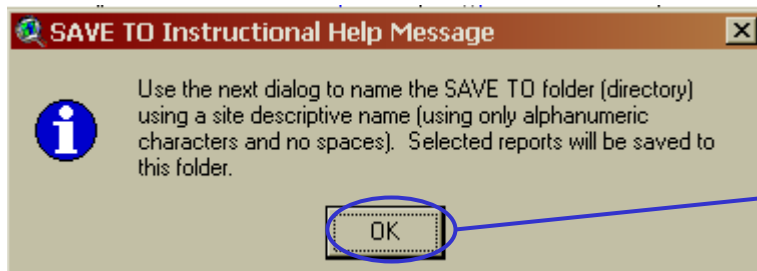


Click OK.



To save the reports for other purposes (e.g., opening them with Excel and making nicely formatted reports with lines, centering, titles, etc), click the **Save Reports** button on the Report Dialog. This will allow you to save each report to a user-defined directory.

A Save Reports dialog box then appears. Select the reports you would like to save in the same manner as when you wanted to show or hide the reports. When you click OK the following message is displayed.

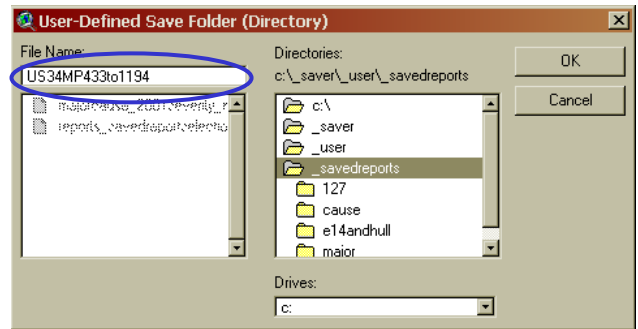


Click OK.

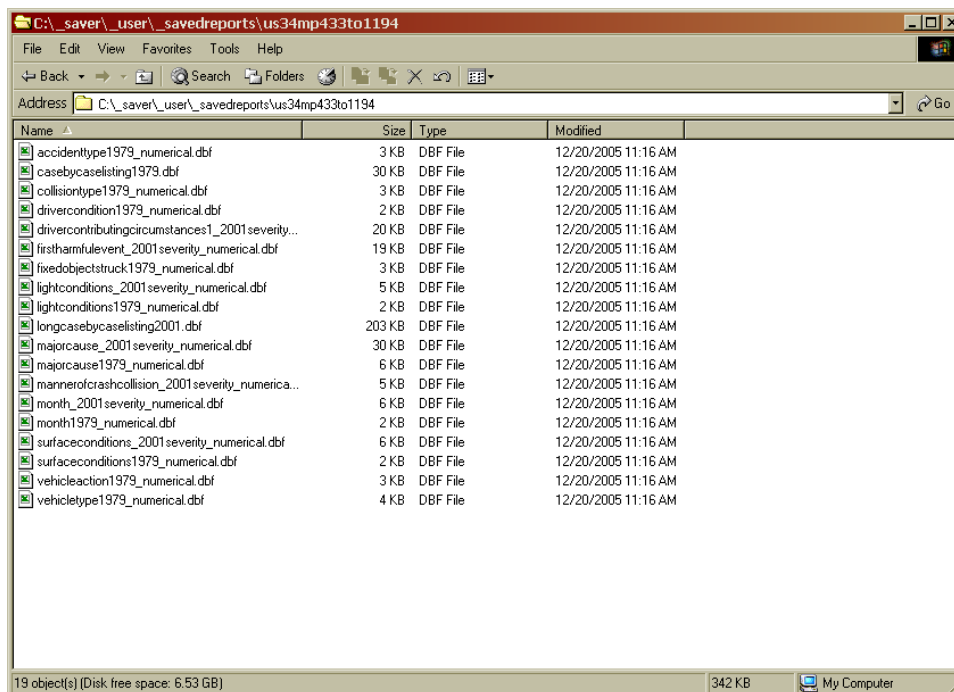
You can create a folder where you would like all of the reports you selected to be saved and SAVER will save all of them to that folder automatically. This is slightly different from previous versions of SAVER in that you had to save each report individually.

In the User-Defined Save Folder dialog box, type in the name of the folder you would like to create to save the reports to in the File Name field.

When you click OK you are asked if you would like to save the entirety of the reports. Unless you have selected a subset of the report and have some reason for saving only that portion, click Yes. SAVER then saves all of the reports you selected to the folder that you had it create.



The recently saved reports appear here. Next, for the year-based reports, you can use the Excel templates that have provide standardized header and footer space, formatting, and calculations.

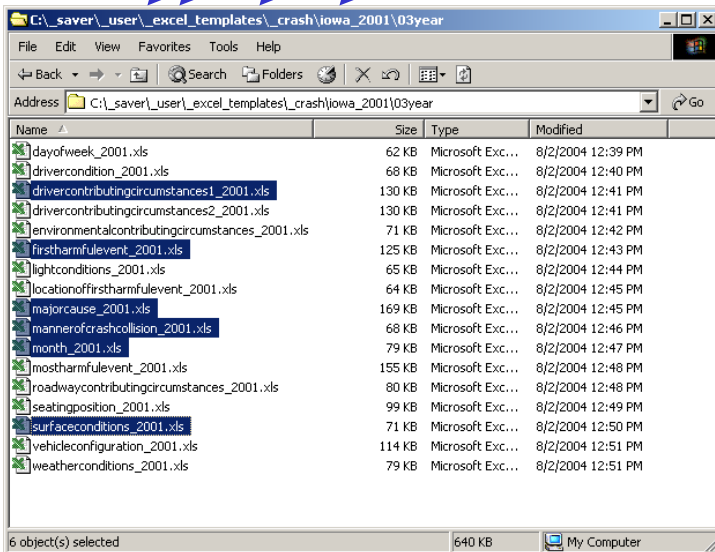
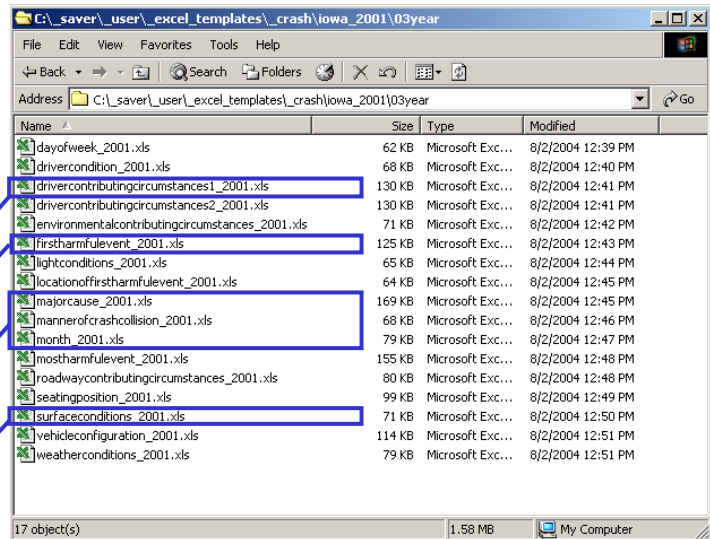


SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004

To find the Excel templates, navigate to “C:_saver_user_excel_templates_crash\iowa_2001\” or “C:_saver_user_excel_templates_crash\iowa_1979\” as appropriate. Then find the appropriate year range, 5-year for this example.

Select the reports
corresponding to the
year-based reports
you ran and saved.



Copy these files.
Navigate back to the
folder where you
saved the reports
from SAVER and
paste them.

SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004

Open one of the SAVER output year-based reports and its appropriate Excel template. If the dBase SAVER output files aren't targeted to open within Excel, you can change this or you can open Excel first, switch to opening files of type dBASE, and then open the file.

Excel should open with both files. If this isn't the case, open the other using Excel. Choose the File menu and the Open choice.

Switch to the SAVER output file (i.e., the dBase file). Place the cursor at the C2 element or position (i.e., in the C column on the 2nd row).

After the cursor is at position C2, hold the Shift key on your keyboard then, in order, depress the End key then the Home key. This highlights the spreadsheet table from C2 to the lower right extent.

Microsoft Excel - mannerofcrashcollision_2001severity_numerical.dbf

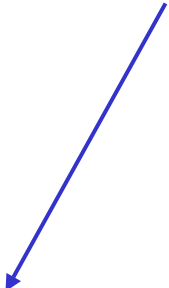
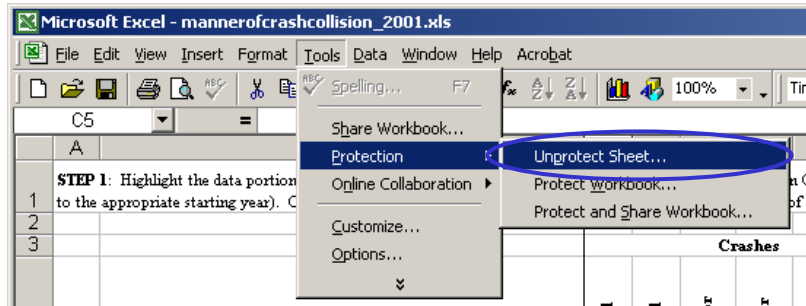
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	YEAI	CRCOMANNER	TOTAL	FATAL	(MAINJ	MINJCI	PUINJC	PDOCR	TOTAL	FATAL	MAJOR	MINOR	POSSIF	UNINJU	UNKINJ	NOTREPR	TD
2	2001	Non-collision	2					2									
3		Head-on															
4		Rear-end															
5		Angle - oncoming left turn															
6		Broadside															
7		Sideswipe - same direction															
8		Sideswipe - opposite direction															
9		Unknown															
10		Not Reported	1					1									
11	2002	Non-collision	2					2									
12		Head-on	1	1				3	2				1		1		
13		Rear-end															
14		Angle - oncoming left turn															
15		Broadside															
16		Sideswipe - same direction															
17		Sideswipe - opposite direction															
18		Unknown	2			1		1	1			1					
19		Not Reported															
20	2003	Non-collision	5			1	1	3	3			1	2	3			
21		Head-on															
22		Rear-end															
23		Angle - oncoming left turn	1			1			1			1		1			
24		Broadside															
25		Sideswipe - same direction															
26		Sideswipe - opposite direction															
27		Unknown															
28		Not Reported															
29	2004	Non-collision															
30		Head-on															
31		Rear-end															
32		Angle - oncoming left turn															
33		Broadside															
34		Sideswipe - same direction															
35		Sideswipe - opposite direction															
36		Unknown	1					1							1		
37		Not Reported															
38	2005	Non-collision	1			1			1			1					
39		Head-on															
40		Rear-end															
41		Angle - oncoming left turn															
42		Broadside															
43		Sideswipe - same direction															
44		Sideswipe - opposite direction															
45		Unknown															
46		Not Reported															
47																	
48																	
49																	
50																	
51																	

Copy this.
(Ctrl+C)

SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004


Switch to the Excel template. Before you can paste the data, you may have to unprotect the worksheets. To do this go to **Tools>Protection>Unprotect Sheet**. If you are prompted for a password, type in “saver” in all lower case.



STEP 1: Highlight the data portion of Manner of Crash/Collision SAVER output file, place cursor at position C5 in this table, and paste. Update first year of data (i.e., change 2001 in position A5 to the appropriate starting year). Continue to the Header/Footer worksheet by using the tab at the bottom of the Excel window.

Year	Manner of Crash/Collision	Crashes					Injuries				
		Total	Fatal	Major	Minor	Possible	Total	Fatal	Major	Minor	Possible
2001	Head-on										
	Rear-end										
	Angle - oncoming left turn										
	Broadside										
	Side-swipe - same direction										
	Side-swipe - opposite direction										
	Unknown										
	Not Reported										
2002	Head-on										
	Rear-end										
	Angle - oncoming left turn										
	Broadside										
	Side-swipe - same direction										
	Side-swipe - opposite direction										
	Unknown										
	Not Reported										
2003	Head-on										
	Rear-end										
	Angle - oncoming left turn										
	Broadside										
	Side-swipe - same direction										
	Side-swipe - opposite direction										
	Unknown										
	Not Reported										
2004	Head-on										
	Rear-end										
	Angle - oncoming left turn										
	Broadside										
	Side-swipe - same direction										
	Side-swipe - opposite direction										
	Unknown										
	Not Reported										
2005	Head-on										
	Rear-end										
	Angle - oncoming left turn										
	Broadside										
	Side-swipe - same direction										
	Side-swipe - opposite direction										
	Unknown										
	Not Reported										

Place the cursor at position C5. Paste the copied data here (Ctrl+V).



SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004

Microsoft Excel - mannerofcrashcollision_2001.xls

STEP 1: Highlight the data portion of Manner of Crash/Collision SAVER output file, place mouse at position C5 in this table, and paste. Update first year of data (i.e., change 2001 in position A5 to the appropriate starting year). Continue to the HeaderFooter worksheet by using the tab at the bottom of the Excel window.

Year	Manner of Crash/Collision	Crashes					Injuries				
		Total	Fatal	Major	Minor	Unknown	Total	Fatal	Major	Minor	Unknown
2001	Non-collision										
	Head-on										
	Rear-end										
	Angle - oncoming left turn										
	Broadside										
	Side-swipe - same direction										
	Side-swipe - opposite direction										
	Unknown										
	Not Reported										
2002	Non-collision										
	Head-on										
	Rear-end										
	Angle - oncoming left turn										
	Broadside										
	Side-swipe - same direction										
	Side-swipe - opposite direction										
	Unknown										
	Not Reported										
2003	Non-collision										
	Head-on										
	Rear-end										
	Angle - oncoming left turn										
	Broadside										
	Side-swipe - same direction										
	Side-swipe - opposite direction										
	Unknown										
	Not Reported										
2004	Non-collision										
	Head-on										
	Rear-end										
	Angle - oncoming left turn										
	Broadside										
	Side-swipe - same direction										
	Side-swipe - opposite direction										
	Unknown										
	Not Reported										
2005	Non-collision										
	Head-on										
	Rear-end										
	Angle - oncoming left turn										
	Broadside										
	Side-swipe - same direction										
	Side-swipe - opposite direction										
	Unknown										
	Not Reported										

Ready

Now switch to the
HeaderFooter tab.

Here we can add some header and footer information
that will be useful when printing out the data.

Microsoft Excel - mannerofcrashcollision_2001.xls

STEP 2: Insert the appropriate descriptors in positions C5-C8 and E13-E15. Continue to the YearByYear and Summed worksheets by using the tabs at the bottom of the Excel window. The YearByYear and Summed worksheets are for review and printing. Most often, the Summed worksheet will be printed because a summary of the data across all data years is desired, not a year by year breakdown.

Header ²		
1 st Line:	2001-2005 Crash History	Data coverage date range.
2 nd Line:	for the <site type> of	Type of feature.
3 rd Line:	<site literal description>	Literary description of feature.
4 th Line:	in <jurisdiction name>, Iowa	Jurisdiction of Feature.
Footer ²		
1 st Line:	Developed by:	Iowa Department of Transportation
2 nd Line:		Highway Division, Engineering Bureau, Office of Traffic and Safety
3 rd Line:		March 2, 2004
4 th Line:	using:	Iowa's Safety Analysis, Visualization, and Exploration Resource (SAVER)
1 st Line:		Company/Business/Jurisdiction
2 nd Line:		Office/Location/Focus Area
3 rd Line:		Date of Report

These lines will appear at the top of the finished worksheets.

These lines will appear at the bottom of the finished worksheets.

Alternate Header (for copying and pasting header information from another source):

1st Line:

2nd Line:

3rd Line:

4th Line:

Alternate Footer (for copying and pasting footer information from another source):

1st Line:

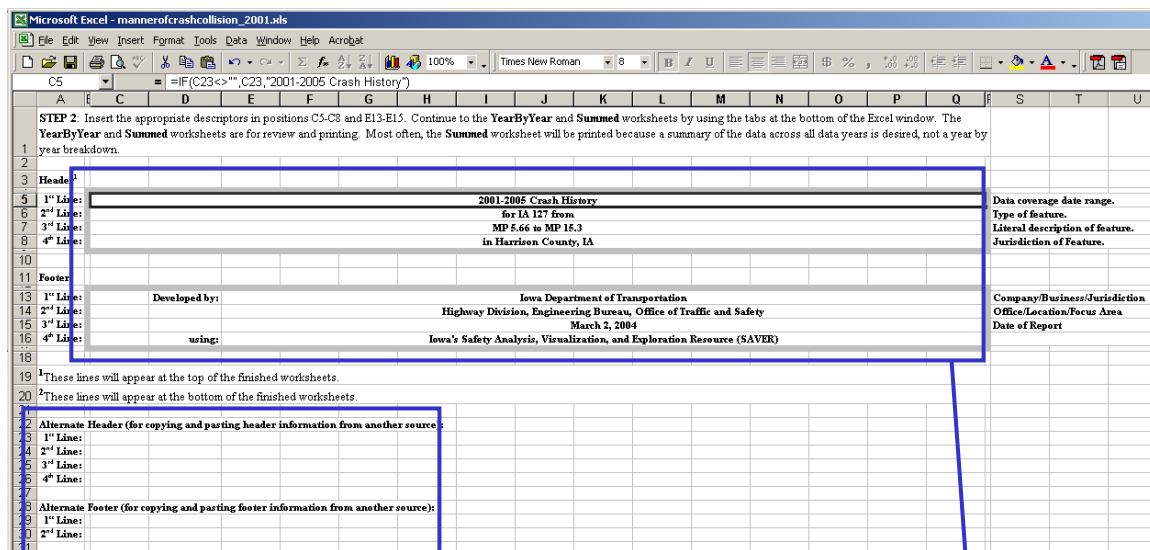
2nd Line:

Next page...

SAVER Example

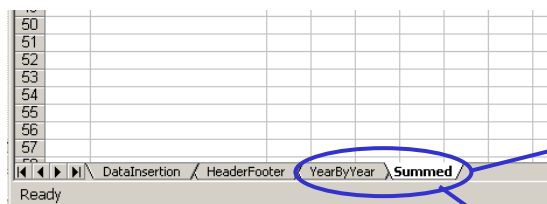
US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004

Information can be added in two locations.

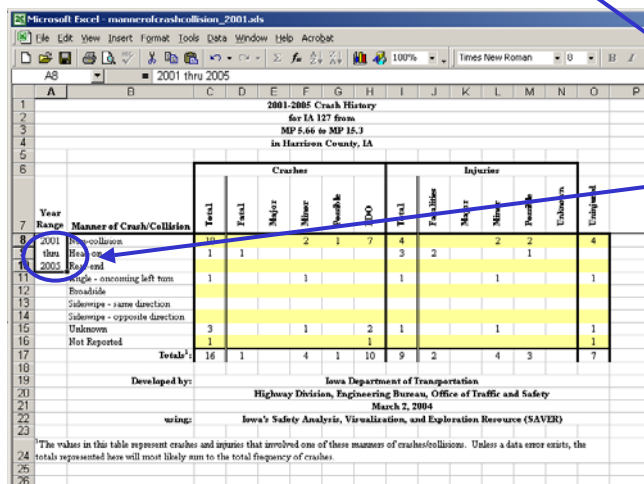


You can type information directly in here. This is usually the same information that was entered when doing the Feature Count Report in SAVER.

The description you type will automatically appear on the summary sheet.



Nothing needs to be done in the YearByYear tab. This could be printed as it appears if you wanted to see a Year by Year summary of the crashes.

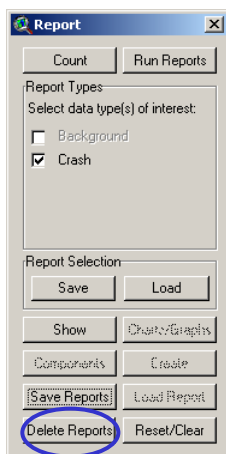
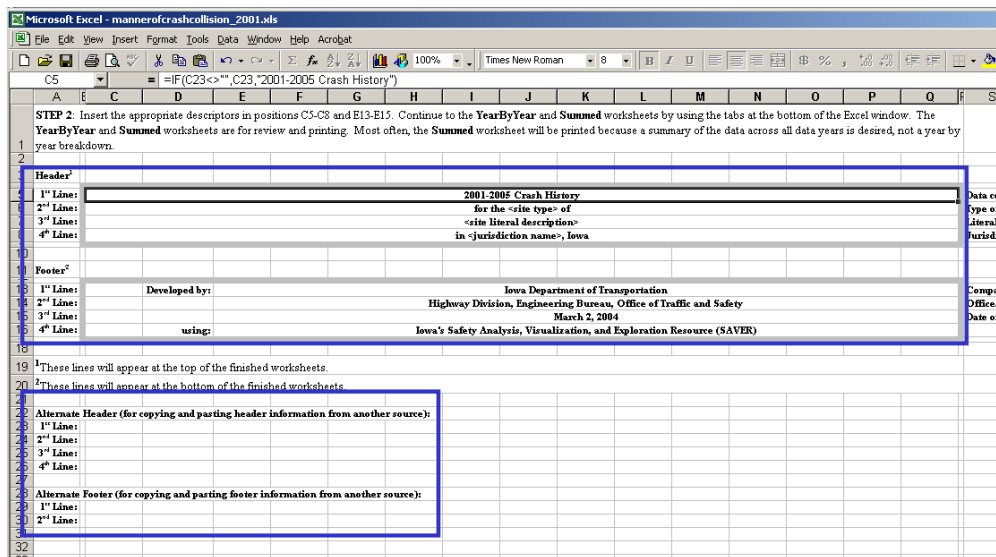


SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004

Do the same for the other output year-based reports (go back to page 36).

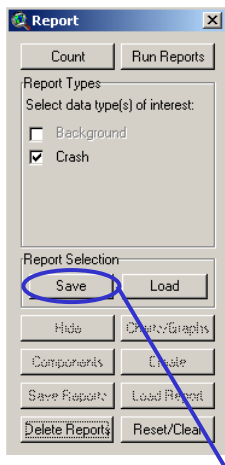
If you do all but the header/footer information, then open all the Excel templates simultaneously, you can copy and paste the description and footer between all the Excel templates.



When done or before running further reports, delete the previously created reports. Begin by going back to ArcView SAVER and returning to the Report dialog.

Click the Delete Reports button.

A dialog showing the reports open. Select the reports to delete. Normally, all reports could be selected. Select the reports to delete and click OK. Looking at the Project Window again, all of the reports should be gone.



Next, you can save the selection of reports you had created. That is, you can save the fact that you had chosen to run a case-based report and 7 year-based reports in the 2001 Iowa Format and a case-based report and 10 year-based reports in the 1979 Iowa Format. Then, when you do another request, you can run these same reports by loading the report selection file and running reports. You might do this if you knew you'd always run the same reports for every data request you do. Using the saved report selection, you wouldn't have to progress through all the check boxes that you used to select the 19 reports you ran previously (8 new and 11 old).

Click Save within the Report Selection control panel.

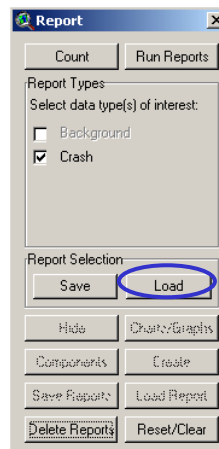


In the Save Report Selection dialog box that comes up, type in a descriptive term for your saved report selection and click OK. You can only replace the portion of the suggested filename prior to the underbar (" _").

To load the saved report selection, click Load on the Report dialog.

Select the report selection to load in the Load Report Selection dialog box that comes up and click OK.

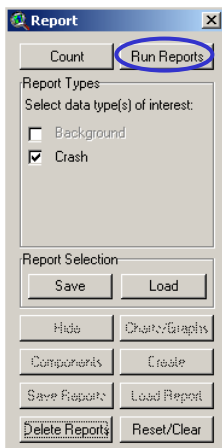
The report selection is loaded and available for running.



To run the selected reports, click the Run Reports button on the Reports dialog.

This button will run either loaded report selections or previously selections made during the same SAVER session.

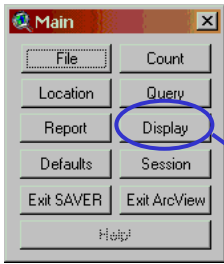
Make sure the Numerical radio button is selected and click Next in the Answers dialog box. Progress as before (see page 28).



Create Stacked Maps

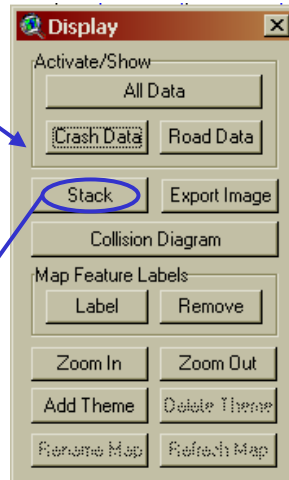
SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004



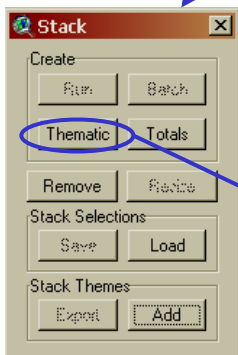
To begin the Stack process, first go to the Display dialog box.

Click the
Display
button.



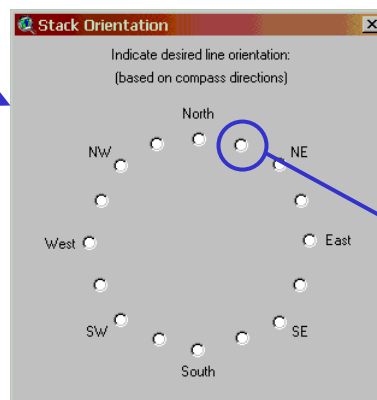
Notice the Stacks control panel. It contains several buttons for Stack creation. All of these will be explained.

Click the Stack
button.



Click the
Thematic
button.

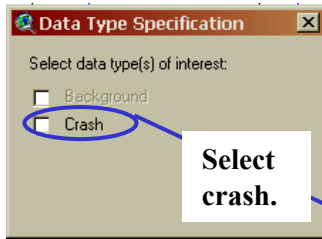
The Stacking Options dialog appears. The Totals option only creates stacks based on the total number of crashes at any one point within the data selection. The Thematic runs the Totals first, then creates stacks based on a selection of user-defined data elements (e.g., Crash Severity, Injury Severity, etc.).



Select a stack orientation perpendicular (i.e., at right-angles) to the primary road direction...or as near as you can get to this as many roads have curves.

SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004



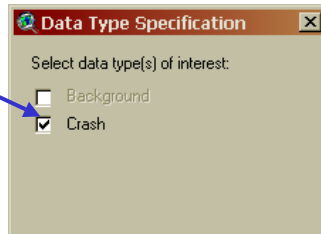
Data Type Specification

Select data type(s) of interest:

☐ Background

☐ Crash

Select
crash.



Data Type Specification

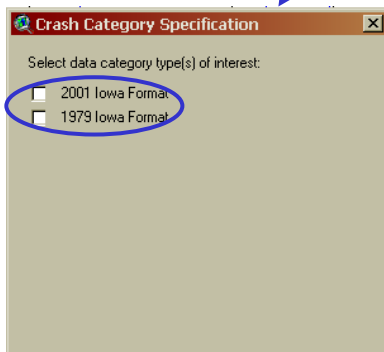
Select data type(s) of interest:

☐ Background

☒ Crash

Currently, only crash data is stackable. At some point, other data will have stack features available.

Click Next in the
Answers dialog box.



Crash Category Specification

Select data category type(s) of interest:

☐ 2001 Iowa Format

☐ 1979 Iowa Format

Select the appropriate
format (Both in this
case).

Click Next in the
Answers dialog box.

SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004

2001 Iowa Format Stack Types

Select stack type(s) of interest:

- ☐ Crash Type
- ☐ Location/Time
- ☐ Severity Level
- ☐ Environmental
- ☐ Driver
- ☐ Vehicle
- ☐ Vehicle Damage
- ☐ Roadway
- ☐ Injury
- ☐ Non-Motorist
- ☐ Work Zone
- ☐ Commercial Vehicle
- ☐ Enforcement

Select these.

2001 Iowa Format Stack Types

Select stack type(s) of interest:

- ☒ Crash Type
- ☒ Location/Time
- ☒ Severity Level
- ☐ Environmental
- ☐ Driver
- ☐ Vehicle
- ☐ Vehicle Damage
- ☐ Roadway
- ☐ Injury
- ☐ Non-Motorist
- ☐ Work Zone
- ☐ Commercial Vehicle
- ☐ Enforcement

Actually, you may select any of these you wish. The more options you select here, the more further options you will have. Additionally, overall, the more options you select, the longer the stack procedure will take.

A good rule-of-thumb is to select only those stack options that make sense for the location you are analyzing.

Click Next in the Answers dialog box.

When you click Next, the first sub-category window for the options chosen will open...in this case, the General stack categories. Subsequent selection of a General stack category will get you to the final tier of selection, the parameters for the chosen General stack categories as shown on the next page for Major Cause.

General Stack Categories

Select category(-ies) of interest:

- ☐ Type of Accident
- ☐ Collision Type
- ☐ Major Cause
- ☐ Fixed Object Struck
- ☐ Location of Fixed Object
- ☐ Fire/Explosion
- ☐ Hit & Run

Select this.

General Stack Categories

Select category(-ies) of interest:

- ☐ Type of Accident
- ☐ Collision Type
- ☒ Major Cause
- ☐ Fixed Object Struck
- ☐ Location of Fixed Object
- ☐ Fire/Explosion
- ☐ Hit & Run

Click Next in the Answers dialog box.

SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004

Major Cause Parameter Selection

Select parameter(s) of interest:

<input checked="" type="checkbox"/> Animal	<input type="checkbox"/> Improper Backing
<input type="checkbox"/> Ran Traffic Signal	<input type="checkbox"/> Illegally Parked/Unattended
<input type="checkbox"/> Ran Stop Sign	<input type="checkbox"/> Swerving/Evasive Action
<input type="checkbox"/> Crossed centerline	<input type="checkbox"/> Over correcting/over steering
<input type="checkbox"/> FTYROW: At uncontrolled intersection	<input type="checkbox"/> Downhill runaway
<input type="checkbox"/> FTYROW: Making right turn on red signal	<input type="checkbox"/> Equipment failure
<input type="checkbox"/> FTYROW: From stop sign	<input type="checkbox"/> Separation of units
<input type="checkbox"/> FTYROW: From yield sign	<input type="checkbox"/> Ran off road - right
<input type="checkbox"/> FTYROW: Making left turn	<input type="checkbox"/> Ran off road - straight
<input type="checkbox"/> FTYROW: From driveway	<input type="checkbox"/> Ran off road - left
<input type="checkbox"/> FTYROW: From parked position	<input type="checkbox"/> Lost Control
<input type="checkbox"/> FTYROW: To pedestrian	<input type="checkbox"/> Inattentive/distracted by: Passenger
<input type="checkbox"/> FTYROW: Other (explain in narrative)	<input type="checkbox"/> Inattentive/distracted by: Use of phone or other device
<input type="checkbox"/> Traveling wrong way or on wrong side of road	<input type="checkbox"/> Inattentive/distracted by: Fallen object
<input checked="" type="checkbox"/> Driving too fast for conditions	<input type="checkbox"/> Inattentive/distracted by: Fatigued/asleep
<input type="checkbox"/> Exceeded authorized speed	<input type="checkbox"/> Other (explain in narrative): Vision obstructed
<input type="checkbox"/> Made improper turn	<input type="checkbox"/> Oversized Load/Vehicle
<input type="checkbox"/> Improper Lane Change	<input type="checkbox"/> Cargo/equipment loss or shift
<input checked="" type="checkbox"/> Followed too close	<input type="checkbox"/> Other (explain in narrative): Other improper action
<input type="checkbox"/> Disregarded RR Signal	<input type="checkbox"/> Unknown
<input type="checkbox"/> Disregarded Warning Sign	<input type="checkbox"/> Other (explain in narrative): No improper action
<input type="checkbox"/> Operating vehicle in an erratic/reckless/careless manner	<input type="checkbox"/> None indicated

You may select all of the Major Cause (or whichever category you chose) options or you may limit them to those that are of most interest. If you select all, only the Major Causes represented by the selected crashes will be stacked.

To see which Major Causes may be displayed, you can run a Year-Based: Major Cause report first but you don't have to.

The selected options are shown on the next page.

Compare/
Contrast

2001-2004 Crash History													
for IA 327 from													
MP 4.46 to 16.3													
in Harrison Co, Iowa													
		Crashes					Injuries						
Year		Total	Fatal	Major	Minor	Possible	PDO	Total	Fatal	Major	Minor	Possible	Uninjured
Range	Major Cause												
2001	Animal	18			3	1	14	4		3	1		10
2001	Ran Traffic Signal												
2001	Ran Stop Sign												
2001	Crossed centerline												
2001	FTYROW: At uncontrolled intersection												
2001	FTYROW: Making right turn on red signal												
2001	FTYROW: From stop sign												
2001	FTYROW: From yield sign												
2001	FTYROW: Making left turn												
2001	FTYROW: From driveway												
2001	FTYROW: From parked position												
2001	FTYROW: To pedestrian												
2001	FTYROW: Other (explain in narrative)												
2001	Traveling wrong way or on wrong side of road												
2001	Driving too fast for conditions	1					1						1
2001	Exceeded authorized speed												
2001	Made improper turn												
2001	Improper Lane Change												
2001	Followed too close	1					1						2
2001	Disregarded RR Signal												
2001	Disregarded Warning Sign												
2001	Operating vehicle in an erratic/reckless/careless/aggressive manner												
2001	Improper Backing												
2001	Illegally Parked/Unattended												
2001	Swerving/Evasive Action	3				1	2	2				2	3
2001	Over correcting/over steering	1				1	1	2				2	1
2001	Downhill runaway	1				1							1
2001	Equipment failure												
2001	Separation of units												
2001	Ran off road - right	1					1						1
2001	Ran off road - straight												
2001	Ran off road - left	2					2						2
2001	Lost Control												
2001	Inattentive/distracted by: Passenger												
2001	Inattentive/distracted by: Use of phone or other device												
2001	Inattentive/distracted by: Fallen object												
2001	Inattentive/distracted by: Fatigued/asleep												
2001	Other (explain in narrative): Vision obstructed												
2001	Oversized Load/Vehicle												
2001	Cargo/equipment loss or shift												
2001	Other (explain in narrative): Other improper action												
2001	Unknown	1					1						
2001	Other (explain in narrative): No improper action	2					2						
2001	None indicated												
	Total	31			3	3	23	8		3	3		20

Developed by:

Iowa Department of Transportation

Highway Division, Engineering Bureau, Office of Traffic and Safety

September 16, 2008

using:

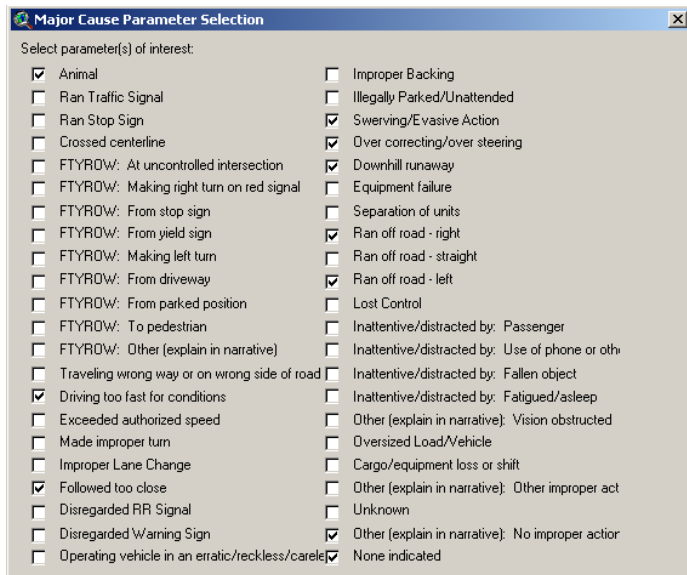
Iowa's Safety Analysis, Visualization, and Exploration Resource (SAVER)

*The values in this table represent crashes and injuries that involved one of these major causes. These values are derived from a combination of crash report data fields. Unless an error exists in the data, the totals represented here will most likely sum to the total frequency of crashes.

Next
page.

SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004



Major Cause Parameter Selection

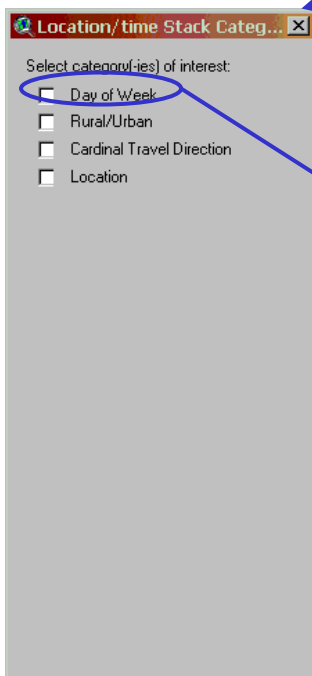
Select parameter(s) of interest:

<input checked="" type="checkbox"/> Animal	<input type="checkbox"/> Improper Backing
<input type="checkbox"/> Ran Traffic Signal	<input type="checkbox"/> Illegally Parked/Unattended
<input type="checkbox"/> Ran Stop Sign	<input checked="" type="checkbox"/> Swerving/Evasive Action
<input type="checkbox"/> Crossed centerline	<input checked="" type="checkbox"/> Over correcting/over steering
<input type="checkbox"/> FTYROW: At uncontrolled intersection	<input checked="" type="checkbox"/> Downhill runaway
<input type="checkbox"/> FTYROW: Making right turn on red signal	<input type="checkbox"/> Equipment failure
<input type="checkbox"/> FTYROW: From stop sign	<input type="checkbox"/> Separation of units
<input type="checkbox"/> FTYROW: From yield sign	<input checked="" type="checkbox"/> Ran off road - right
<input type="checkbox"/> FTYROW: Making left turn	<input type="checkbox"/> Ran off road - straight
<input type="checkbox"/> FTYROW: From driveway	<input checked="" type="checkbox"/> Ran off road - left
<input type="checkbox"/> FTYROW: From parked position	<input type="checkbox"/> Lost Control
<input type="checkbox"/> FTYROW: To pedestrian	<input type="checkbox"/> Inattentive/distracted by: Passenger
<input type="checkbox"/> FTYROW: Other (explain in narrative)	<input type="checkbox"/> Inattentive/distracted by: Use of phone or other
<input type="checkbox"/> Traveling wrong way or on wrong side of road	<input type="checkbox"/> Inattentive/distracted by: Fallen object
<input checked="" type="checkbox"/> Driving too fast for conditions	<input type="checkbox"/> Inattentive/distracted by: Fatigued/asleep
<input type="checkbox"/> Exceeded authorized speed	<input type="checkbox"/> Other (explain in narrative): Vision obstructed
<input type="checkbox"/> Made improper turn	<input type="checkbox"/> Oversized Load/Vehicle
<input type="checkbox"/> Improper Lane Change	<input type="checkbox"/> Cargo/equipment loss or shift
<input checked="" type="checkbox"/> Followed too close	<input type="checkbox"/> Other (explain in narrative): Other improper act
<input type="checkbox"/> Disregarded RR Signal	<input type="checkbox"/> Unknown
<input type="checkbox"/> Disregarded Warning Sign	<input checked="" type="checkbox"/> Other (explain in narrative): No improper action
<input type="checkbox"/> Operating vehicle in an erratic/reckless/careless	<input checked="" type="checkbox"/> None indicated

Click Next in the
Answers dialog box.

Once you click next, if further options have
been selected, they will automatically appear.
Thus, the change from Major Cause
parameters to the Location/Time categories.

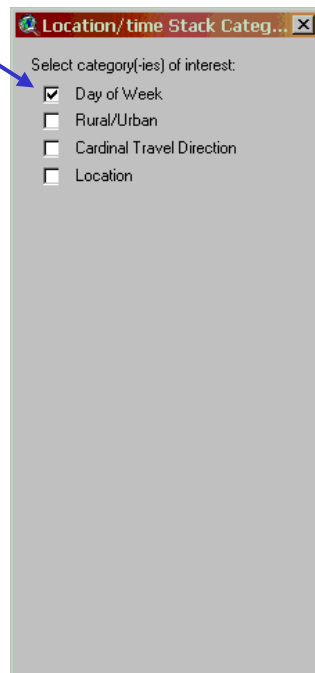
Follow the same procedure for selecting
options of interest.



Location/time Stack Categ...

Select category(-ies) of interest:

- ☐ Day of Week
- ☐ Rural/Urban
- ☐ Cardinal Travel Direction
- ☐ Location



Location/time Stack Categ...

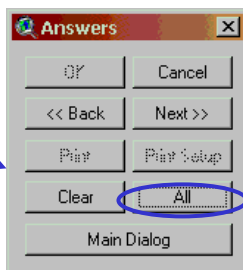
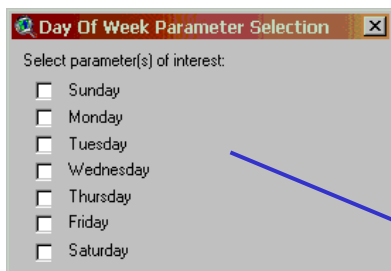
Select category(-ies) of interest:

- ☒ Day of Week
- ☐ Rural/Urban
- ☐ Cardinal Travel Direction
- ☐ Location

Click Next in the
Answers dialog box.

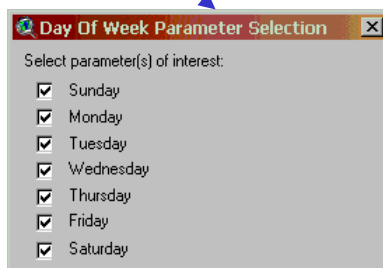
SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004

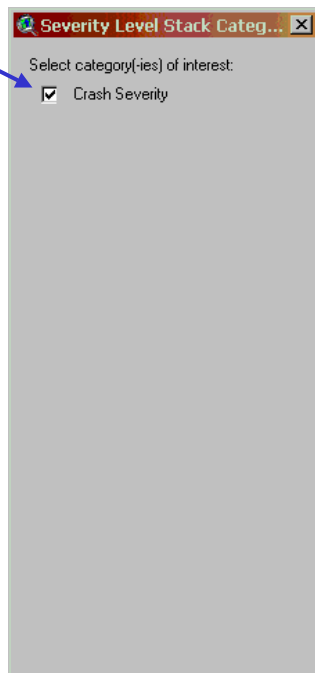
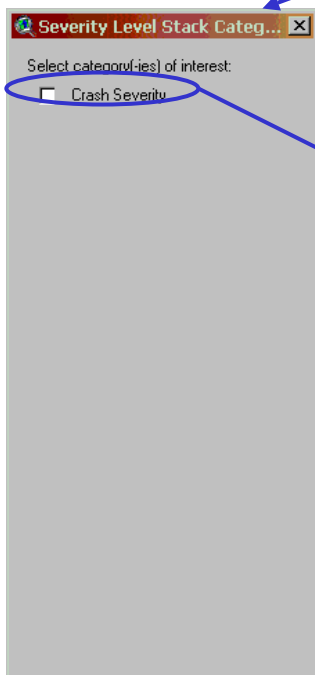


Continue through the selections. If you want every option under a certain set, use the All button on the Answers dialog.

Click All.



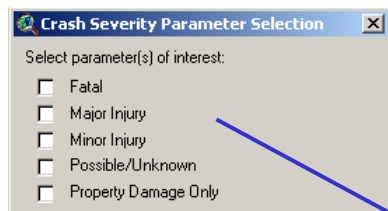
Click Next in the Answers dialog box.



Click Next in the Answers dialog box.

SAVER Example

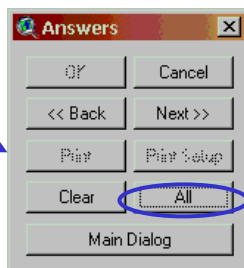
US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004



Crash Severity Parameter Selection

Select parameter(s) of interest:

- ☐ Fatal
- ☐ Major Injury
- ☐ Minor Injury
- ☐ Possible/Unknown
- ☐ Property Damage Only



Answers

OK Cancel

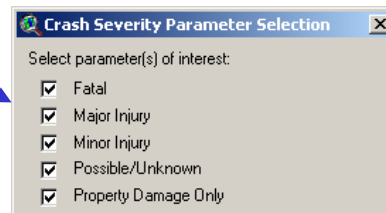
<< Back Next >>

Play Play Setup

Clear All

Main Dialog

Click
All.



Crash Severity Parameter Selection

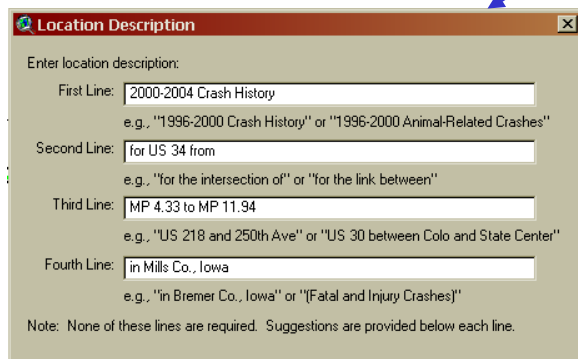
Select parameter(s) of interest:

- ☒ Fatal
- ☒ Major Injury
- ☒ Minor Injury
- ☒ Possible/Unknown
- ☒ Property Damage Only

Click Next in the
Answers dialog box.

The process will repeat for the
1979 Iowa Format. Some of the
options available will be slightly
different due to the difference in
the forms.

Once all the selections you indicated are finished, a
site description window will appear. If you had
already filled this information in during some other
process (e.g., Query or Report) then it will have that
same description. If not, fill it in at your discretion.



Location Description

Enter location description:

First Line: 2000-2004 Crash History
e.g., "1996-2000 Crash History" or "1996-2000 Animal-Related Crashes"

Second Line: for US 34 from
e.g., "for the intersection of" or "for the link between"

Third Line: MP 4.33 to MP 11.94
e.g., "US 218 and 250th Ave" or "US 30 between Colo and State Center"

Fourth Line: in Mills Co., Iowa
e.g., "in Bremer Co., Iowa" or "[Fatal and Injury Crashes]"

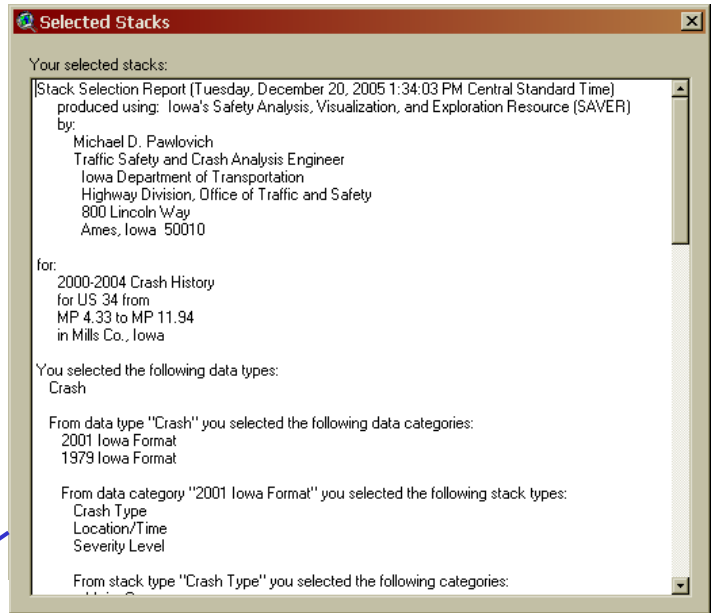
Note: None of these lines are required. Suggestions are provided below each line.

Click Next in the
Answers dialog box.

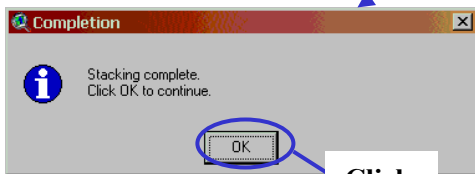
SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004

Next you will see a report, similar to those developed for the Query and Report functions, that outlines all the choices you've just made. Print/copy for your records or disregard.

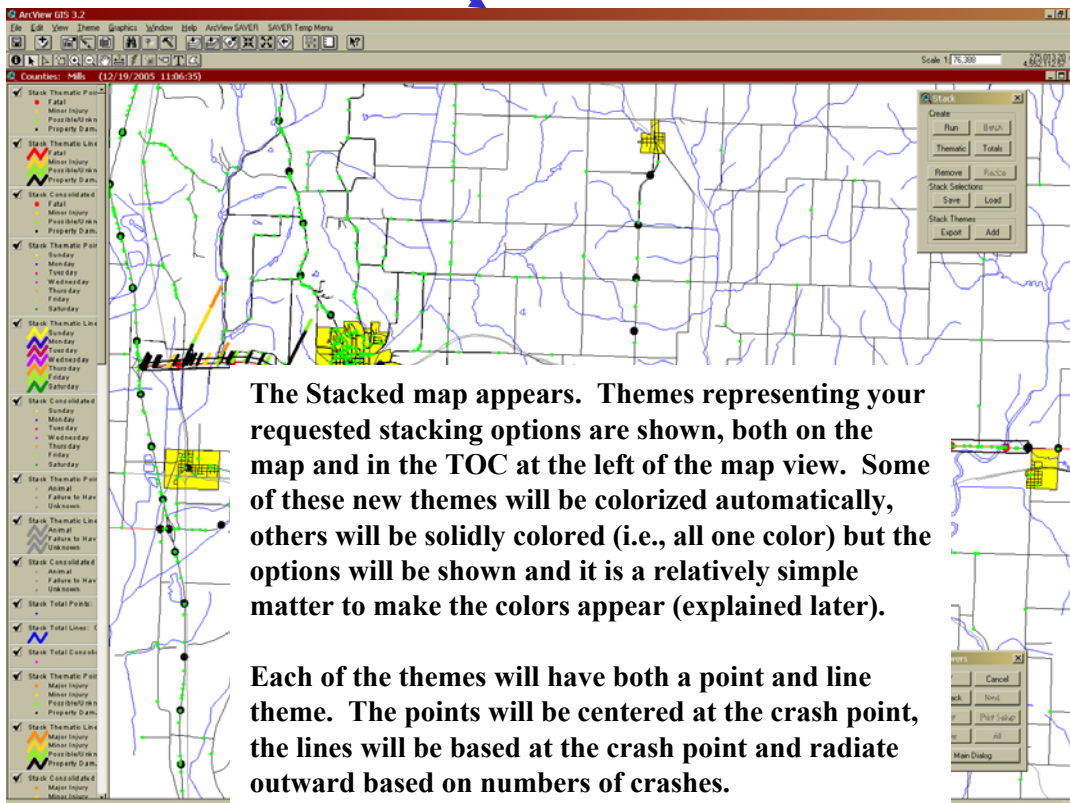


Click Next in the
Answers dialog box.

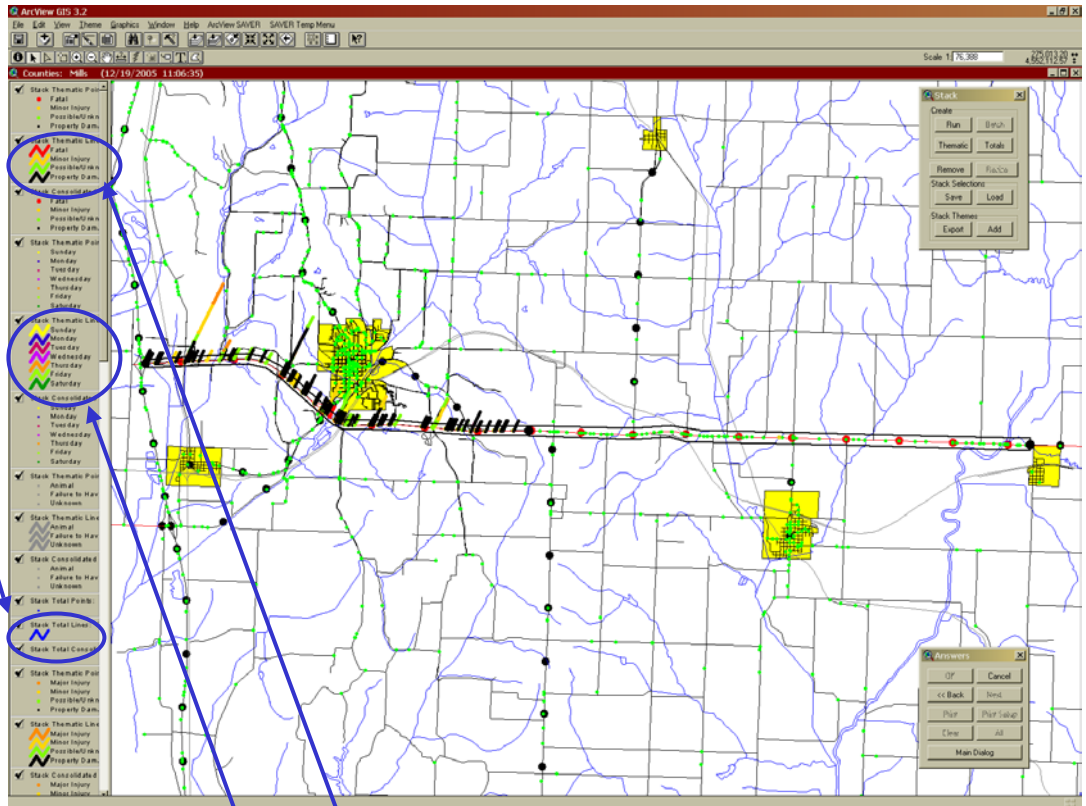


Click
OK.

After a wait, the length of which depends on the number of crashes selected, the number of crash stacking options chosen, and the number of years being stacked over, this stacking completion dialog appears.



The screenshot shows the ArcView GIS 3.2a interface. The map displays a river network with various thematic layers. The legend on the left lists several layers, including 'Stack Thematic Point', 'Stack Thematic Line', 'Stack Consolidated', and 'Stack Total Points'. Blue arrows point from the text in the surrounding document to specific layers in the legend.

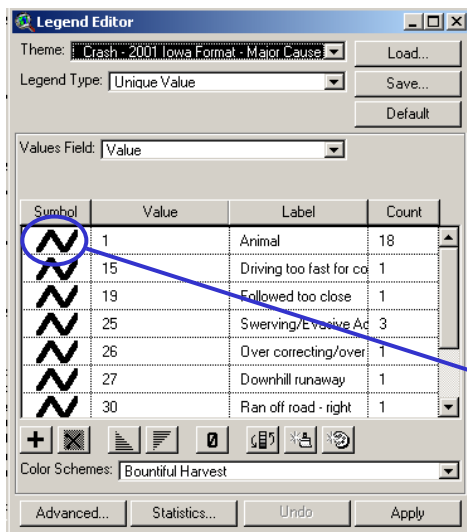
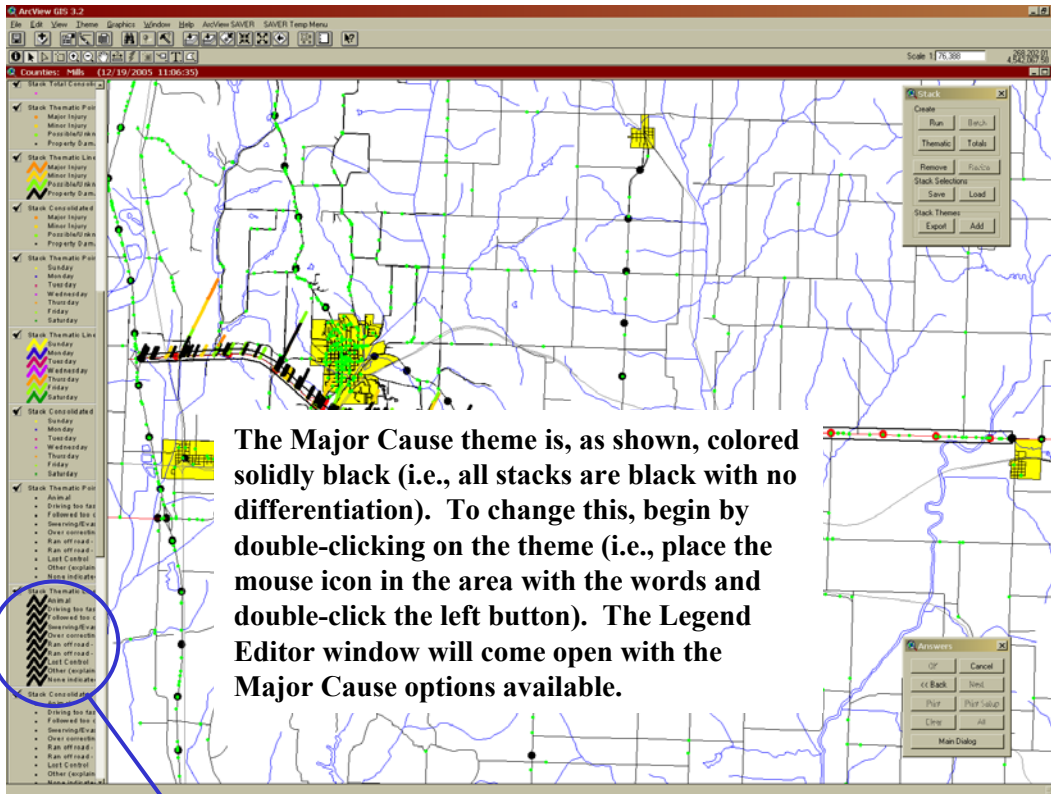


Another oft-generated stacking option is the crash severity. These are automatically colorized, with fatal crashes represented by red, injury crashes with some shade of yellow/orange, possible/unknown a shade of green, and property damage crashes by black.

The Day of Week stacking option is also automatically colorized.

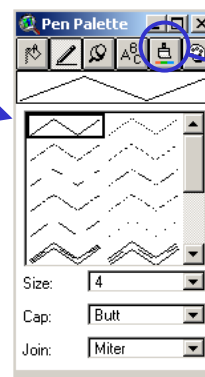
SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004



Two ways are available to change the colors of the stacks. Both will be explained.

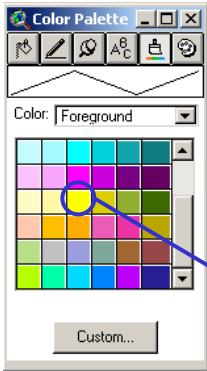
With the Legend Editor window open, you can change individual colors for each category, if you choose. To do this, first double-click on the symbol to the left of a particular category. As shown, for example, double-click on the symbol to the left of the Animal label. The Pen Palette will open.



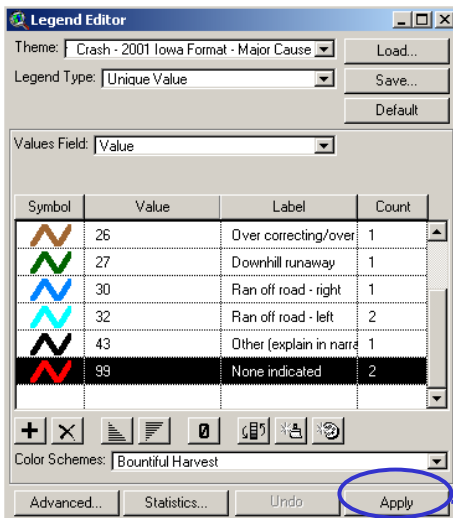
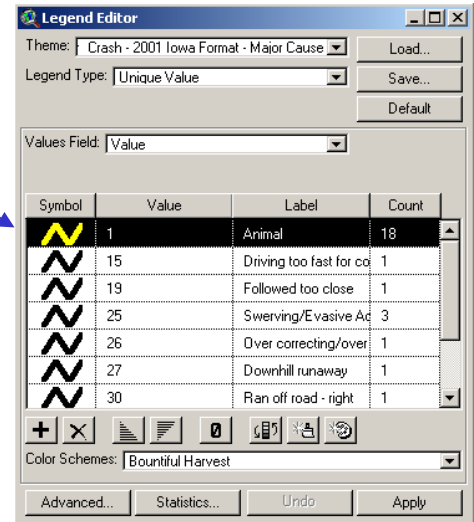
Choose the Paint Brush option.

SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004



Choose the color you are interested in. It should change in the Legend Editor window.

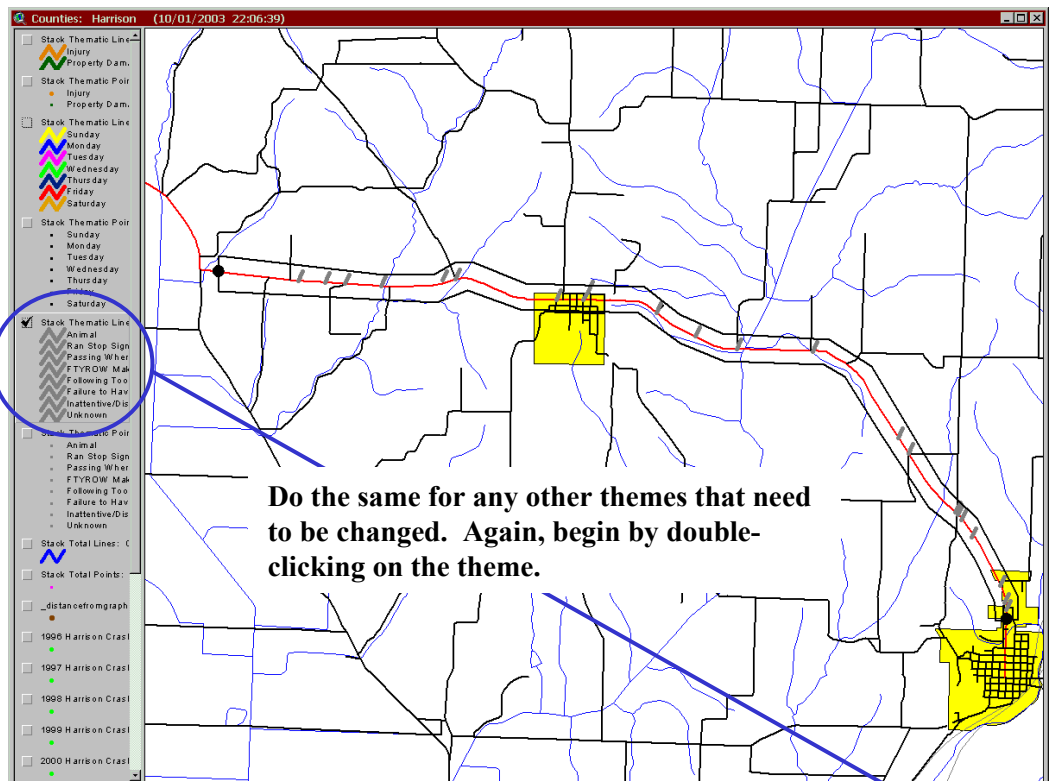
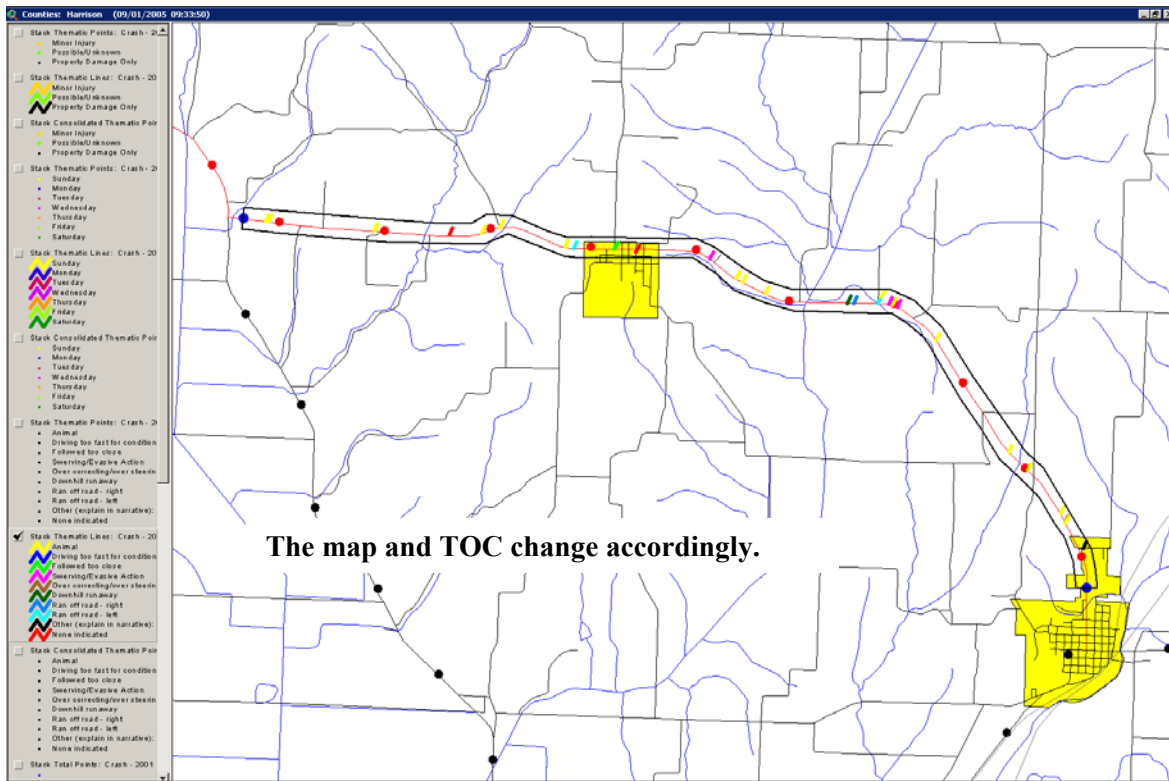


Do the same for the other categories. Try to pick colors that might aid understanding of the meaning. This isn't always possible.

Click Apply. Then close out of the Pen Palette and Legend Editor.

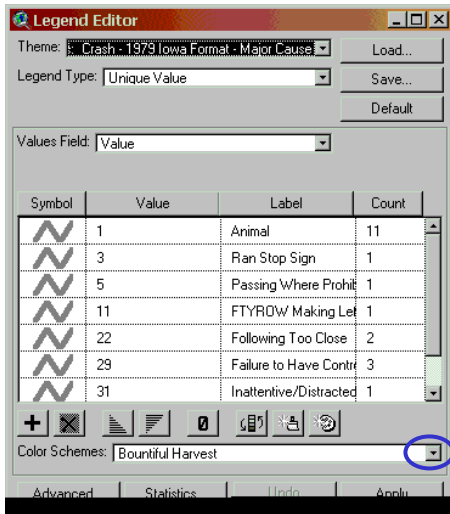
SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004



SAVER Example

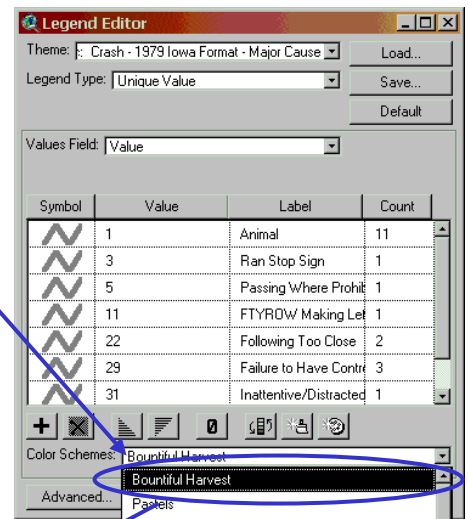
US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004



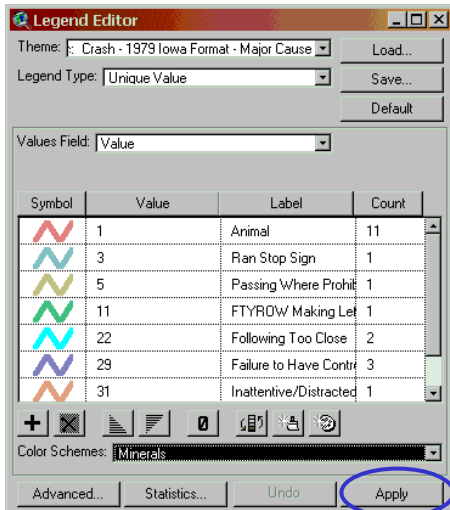
This time, use the color schemes near the bottom of the Legend Editor.

Click the list arrow to the right of the Color Schemes.

Choose an appropriate color scheme. You may have to investigate several.



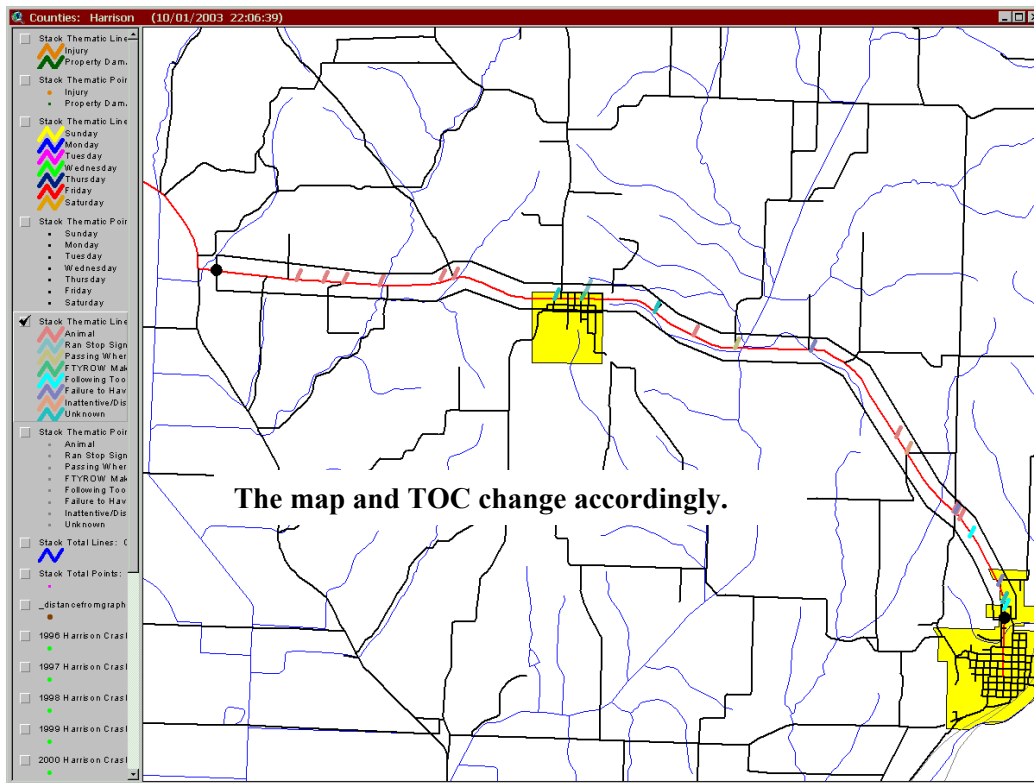
Choosing a color schemes automatically colorizes all options. However, the color choices are less likely to be appropriate for the meaning.



Click Apply.

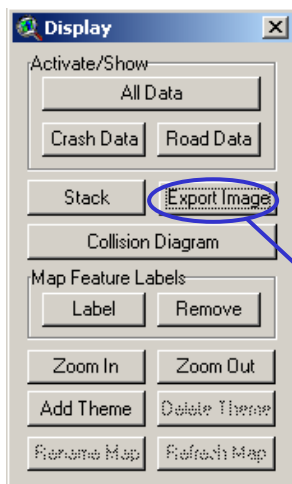
SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004

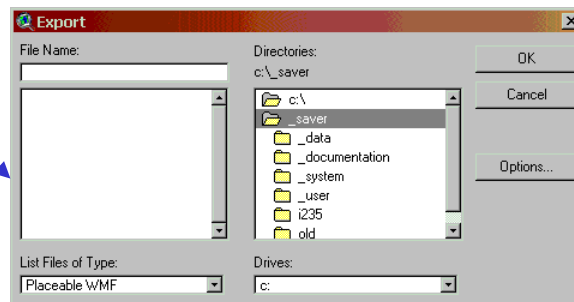


Next, you may want to save the map image for posterity or for purposes of inclusion into a report (e.g., the Feature Count report that you may have brought into Microsoft Word).

Go to the Display dialog box.



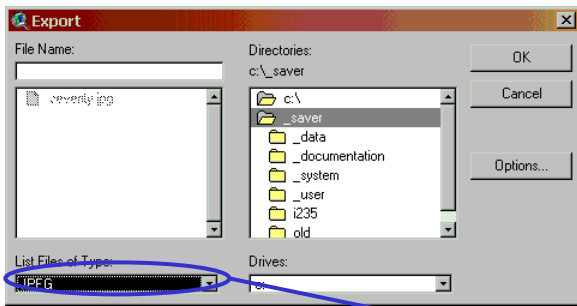
Click
Export
Image.



The Export window appears,
enabling assignment of file names
and choice of image save format.

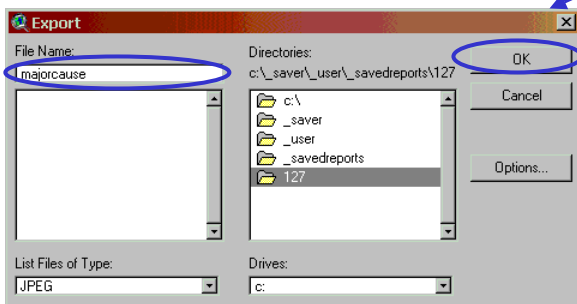
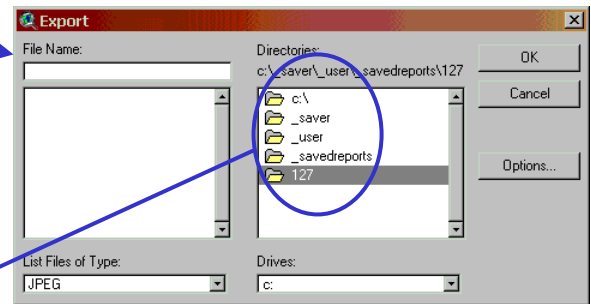
SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004



Most often, JPEG images are small in file size so are relatively easy to transfer but they also often have sufficient image quality. The JPEG choice is at the bottom of the choices. Use whatever you wish, however.

Choose your save directory location or use the default save directory.



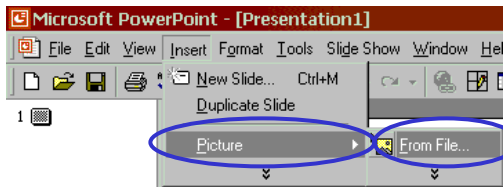
Assign a filename. It can be whatever you choose but you might consider a descriptive name.



You can bring these images into many software packages (e.g., Word, PowerPoint, etc.). In this case, you'll be shown how to bring an image into MicroSoft PowerPoint.

SAVER Example

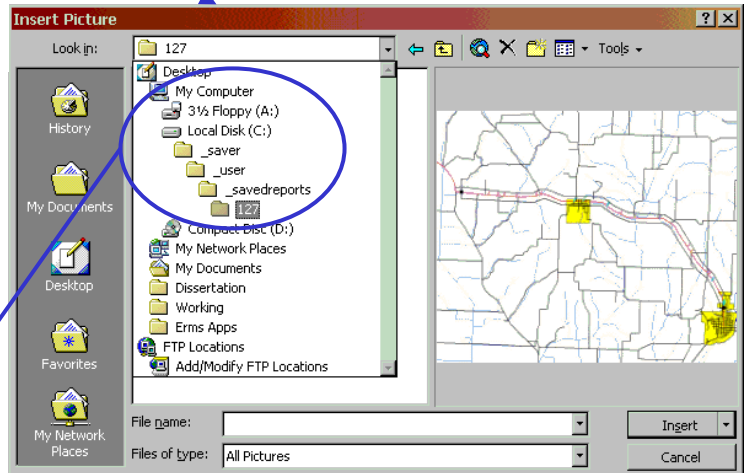
US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004



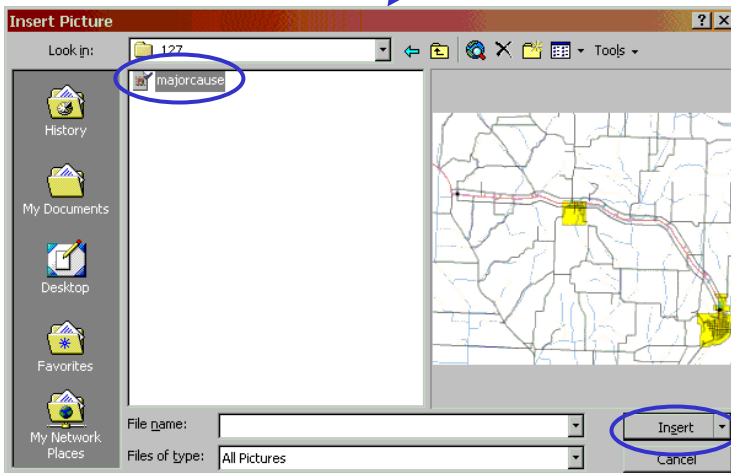
Within PowerPoint, you'll first have to pick some sort of presentation template. This may change between versions of PowerPoint. A blank template is usually good.

Choose Picture → From File.

Once PowerPoint is open, choose the Insert drop down menu, then Picture → From File.



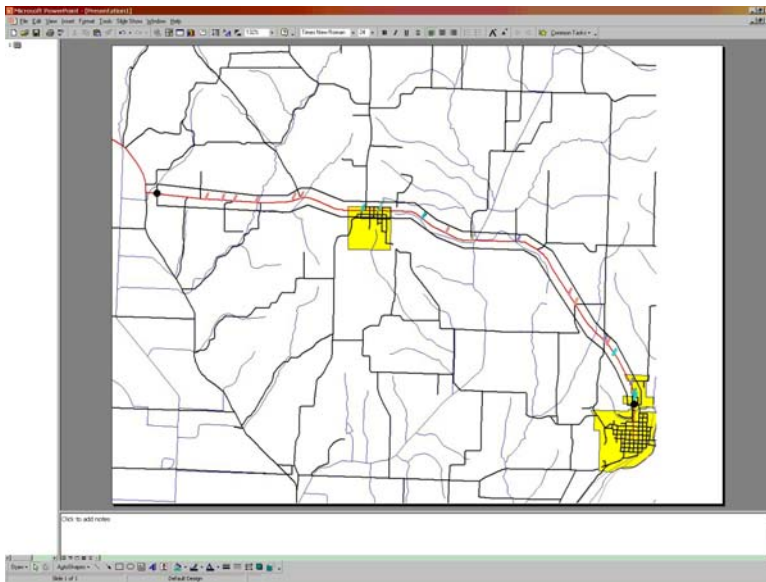
Navigate to the file location.



Highlight the file and click Insert.

SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004



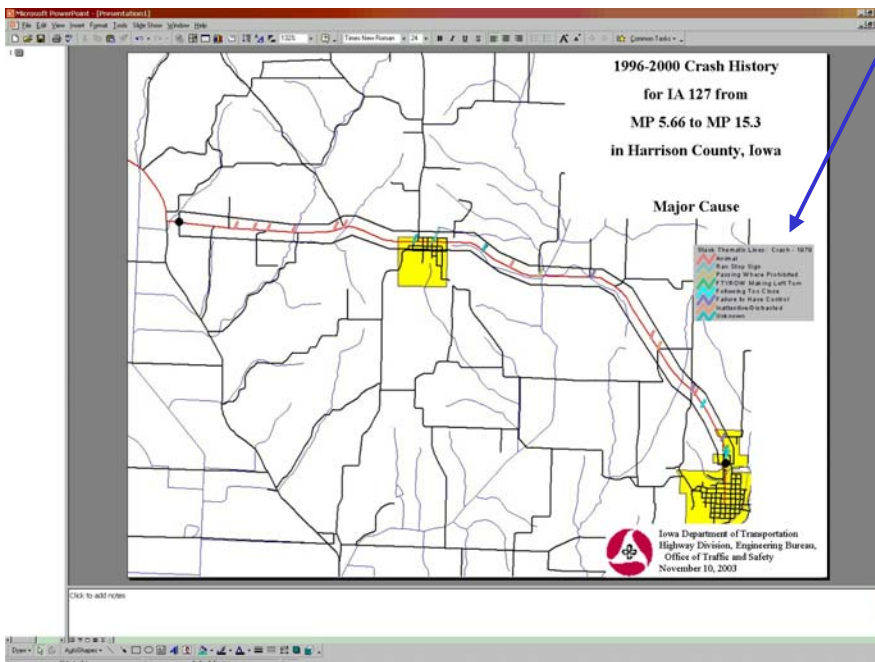
The image should appear.

Now, other presentation items
may be inserted (title, key,
agency, etc.).

A key for the stacked items may be obtained by making a screen print of the ArcView map, pasting it into an image software, and clipping just the thematic theme's TOC listing. Start by having the map visible and making sure the TOC is wide enough to display the thematic descriptions. Then depress your <PrtSc> button on your keyboard (this is likely in the upper right of the keyboard). Then open up Microsoft Photo Editor or some other image software, clip the image to just the portion you want, and save it to file. Insert this file just as you did the map.

Stack Thematic Lines: Crash - 1979

- Animal
- Ran Stop Sign
- Passing Where Prohibited
- FTYRDW Making Left Turn
- Following Too Close
- Failure to Have Control
- Inattentive/Distracted
- Unknown

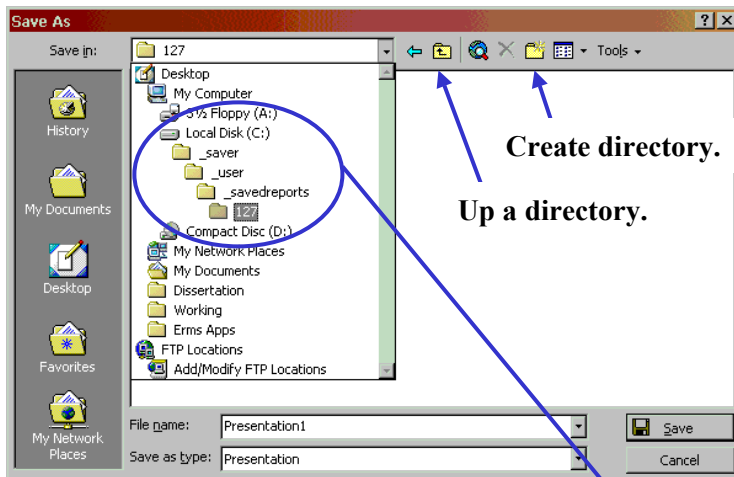


Insert a textbox for the title
and type in an appropriate,
descriptive title.

Insert any logo you might
wish to include (e.g., the
Iowa DOT logo). Then
insert another textbox and
type in an appropriate
designation of your office.

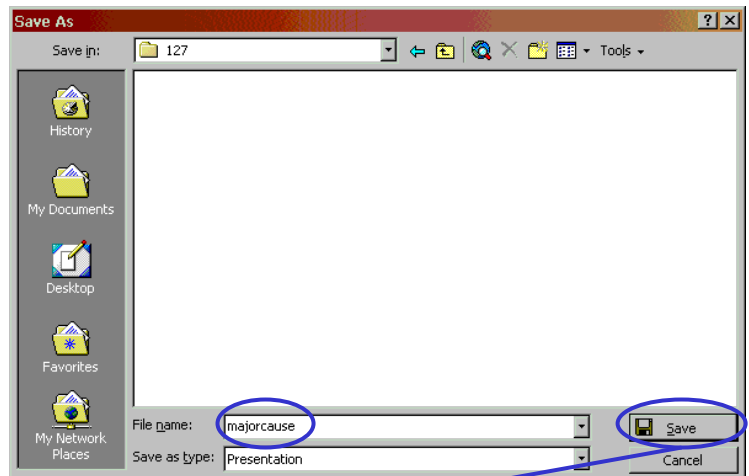
SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004



Save the file. To do so, open the File menu and select Save As.

Pick the directory to save to. You can create a new directory if you wish. Type in an appropriate file name. Click Save.



Click Save.

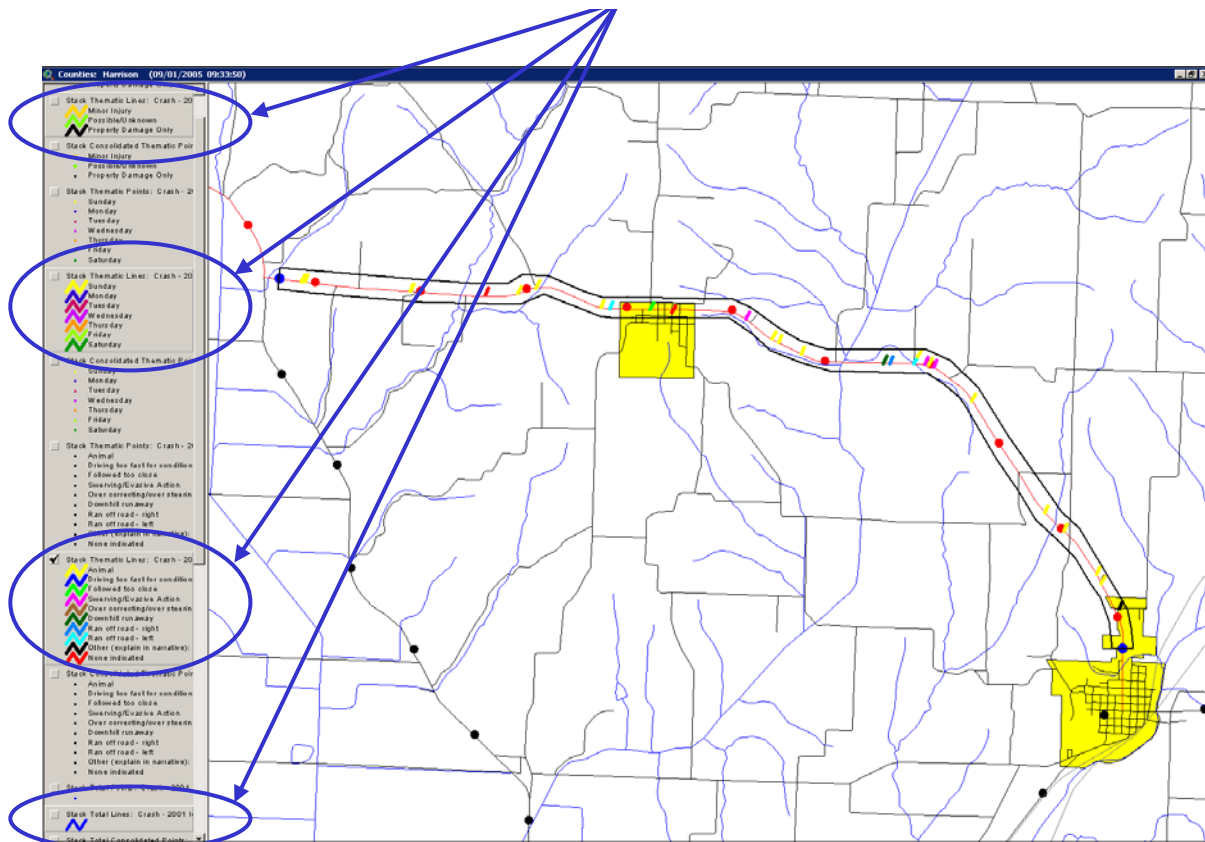
The file is saved. You may also print the file.

Next, we look at saving the individual themes to shapefiles – 1) to preserve them in case we want to review them later and 2) to allow us to send our results to other SAVER or other GIS users (e.g., SAVER shapefiles can be read into GeoMedia which many in the Iowa DOT use).

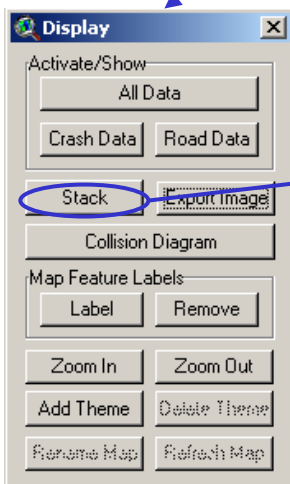
SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004

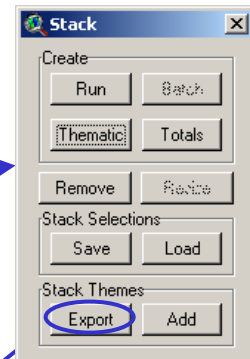
To begin, make sure that the themes you wish to save are active in the SAVER map window.



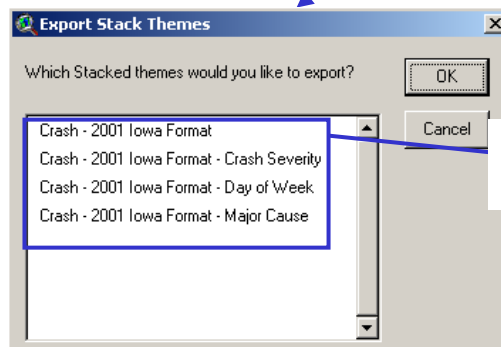
Make sure you are in the Display dialog.



Click Stack in
the Display dialog
panel.



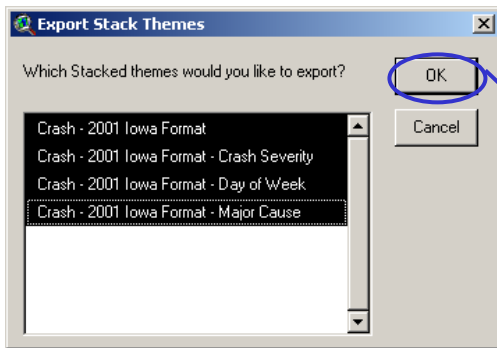
Click Export in
the Stack Themes
control panel.



Choose the
themes to save.

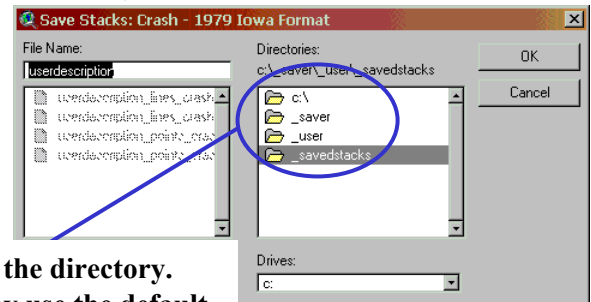
SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004

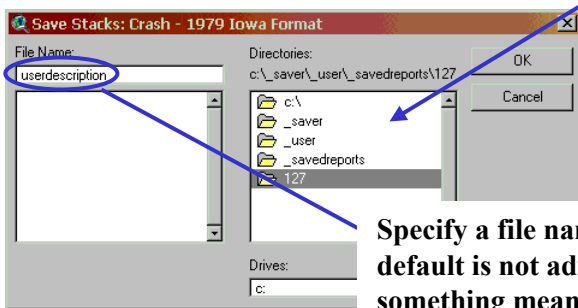


Click
OK.

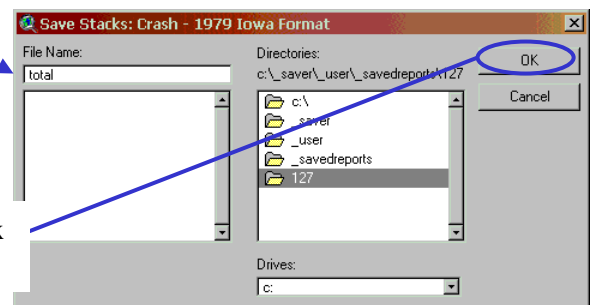
SAVER will open a Save File dialog. Using this dialog, you can specify a save location and a save name. Note that the Save File dialog identifies the stacked theme that is being saved at the top. Pick a name that is appropriate. It doesn't have to be long and SAVER will add some additional description to the file anyway.



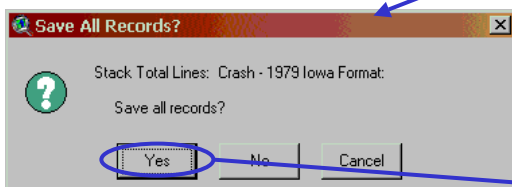
Choose the directory.
You may use the default.



Specify a file name. Using the
default is not advised. Choose
something meaningful to you.



Click
OK.

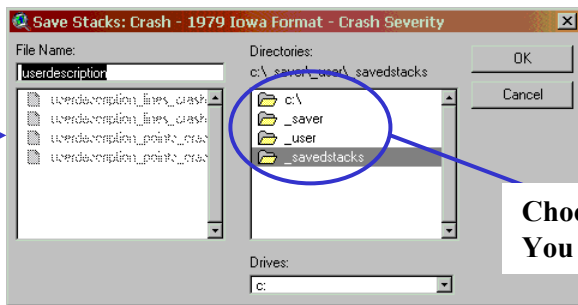


SAVER will ask you if you wish to save all records (i.e.,
the entire theme). This is usually the case.

Click
Yes.

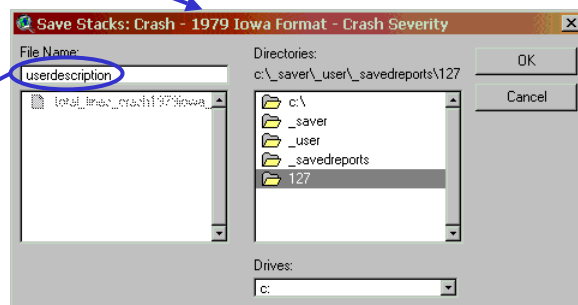
SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004

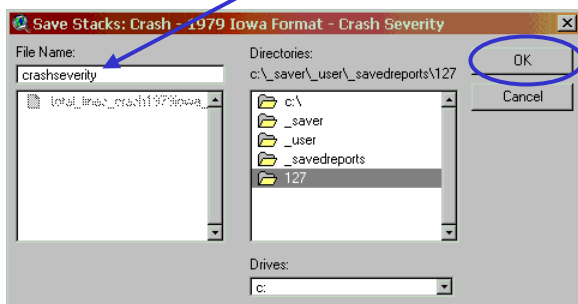


SAVER will progress to saving the other stacked themes in the list.

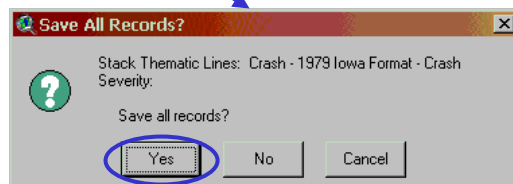
Choose the directory.
You may use the default.



Specify a file name.
Using the default is
not advised.



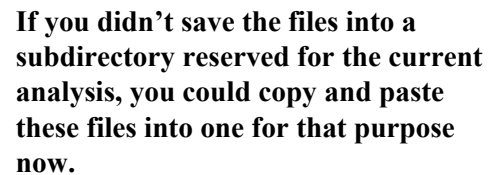
Click
OK.



Click
Yes.

This page will essentially
repeat for the remaining
stacked themes that you
chose to save.

When all
are saved.



Counties: Harrison (10/01/2013 2:06:39)

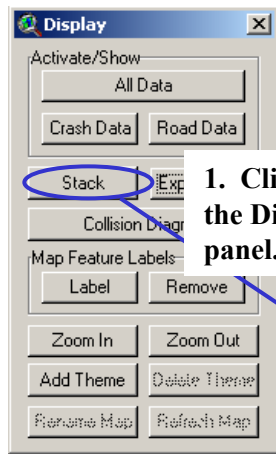
- ☐ Stack Thematic Lines: Crash - 1979
 - Injury
 - Property Damage Only
- ☐ Stack Thematic Points: Crash - 1979
 - Injury
 - Property Damage Only
- ☐ Stack Thematic Lines: Crash - 1979
 - Sunday
 - Monday
 - Tuesday
 - Wednesday
 - Thursday
 - Friday
 - Saturday
- ☐ Stack Thematic Points: Crash - 1979
 - Sunday
 - Monday
 - Tuesday
 - Wednesday
 - Thursday
 - Friday
 - Saturday
- ☒ Stack Thematic Lines: Crash - 1979
 - Animal
 - Ran Stop Sign
 - Passing Where Prohibited
 - FTYROW Making Left Turn
 - Following Too Close
 - Failure to Have Control
 - Inattentive/Distracted
 - Unknown
- ☐ Stack Thematic Points: Crash - 1979
 - Animal
 - Ran Stop Sign
 - Passing Where Prohibited
 - FTYROW Making Left Turn
 - Following Too Close
 - Failure to Have Control
 - Inattentive/Distracted
 - Unknown
- ☐ Stack Total Lines: Crash - 1979 Iowa
- ☐ Stack Total Points: Crash - 1979 Iowa
- ☐ _distancefromgraphic_20031110_201
- ☐ 1997 Harrison Crashes
- ☐ 1998 Harrison Crashes
- ☐ 1999 Harrison Crashes
- ☐ 2000 Harrison Crashes

Set all stack themes active.

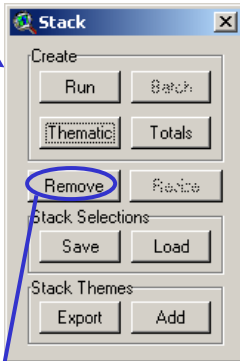
SAVER Example

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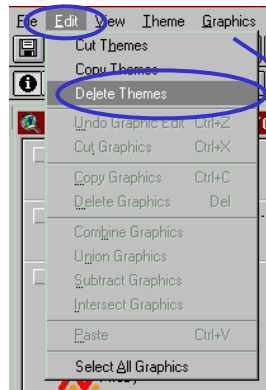
To delete the temporary stacked themes, you have two options: 1) use SAVER's Remove stacks option or 2) use ArcView's Delete Themes option.



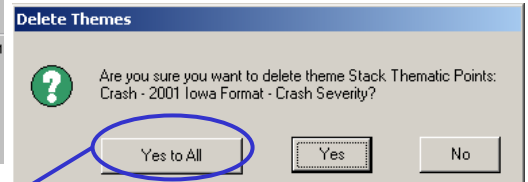
1. Click Stack in the Display dialog panel.



Click Remove.

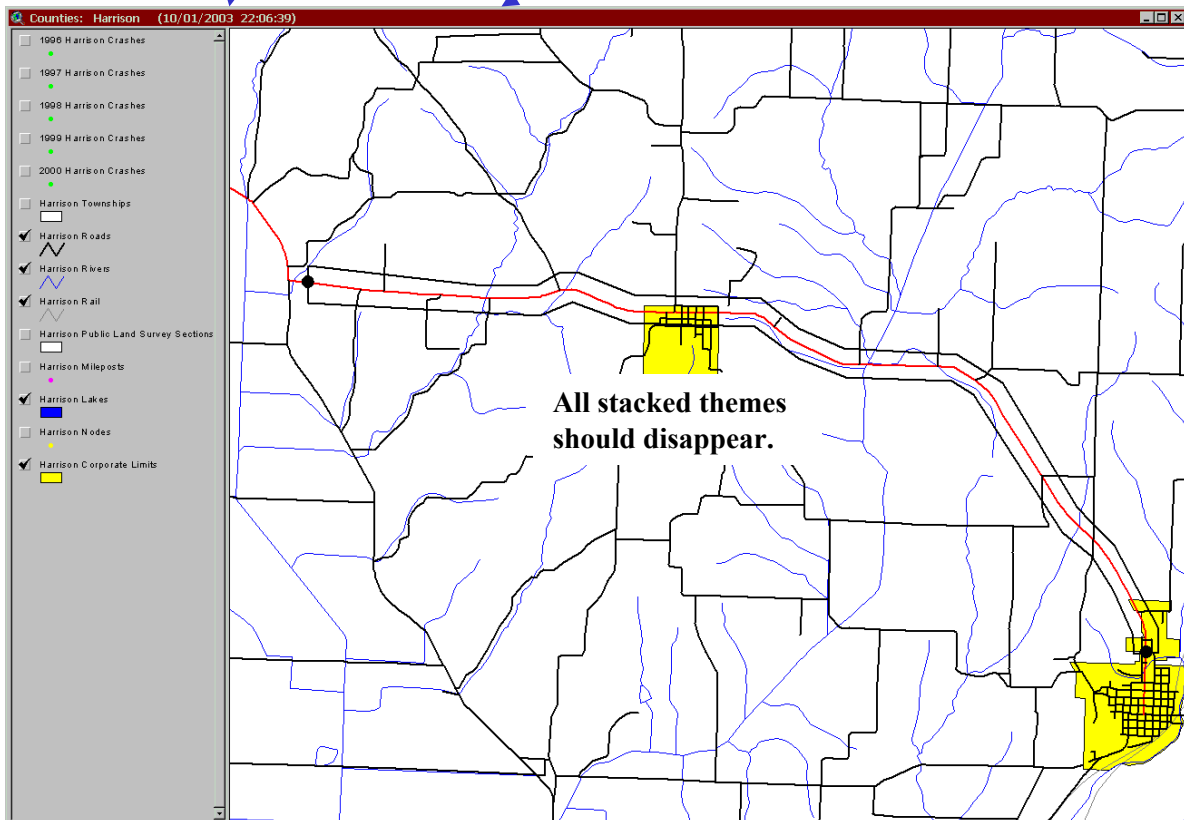


2. Under the Edit menu, choose Delete Themes. A dialog that ensures that you are doing what you want appears.



Click Yes to All.

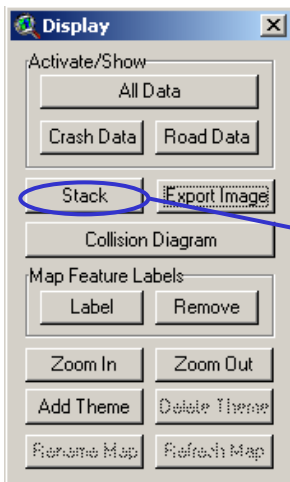
This will delete all active themes. If there are themes you don't wish to delete, click either Yes or No (as appropriate) for each theme.



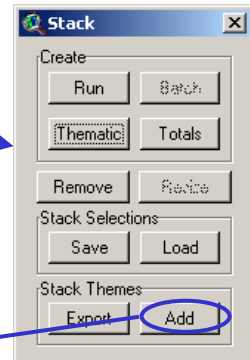
Now you need to add those saved stacked themes that you want in the view.

SAVER Example

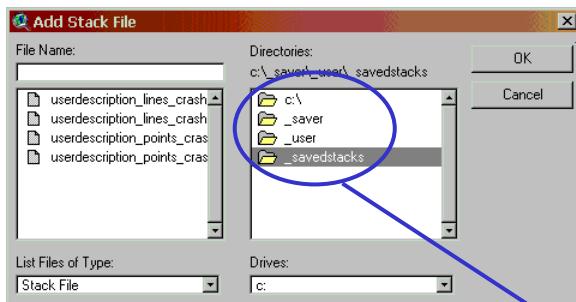
US 34, MP 4.33 to MP 20.41,
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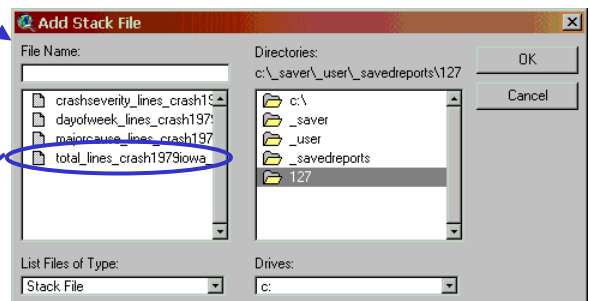
To open the stacks that were saved in the previous step, click Stack in the Display dialog panel.



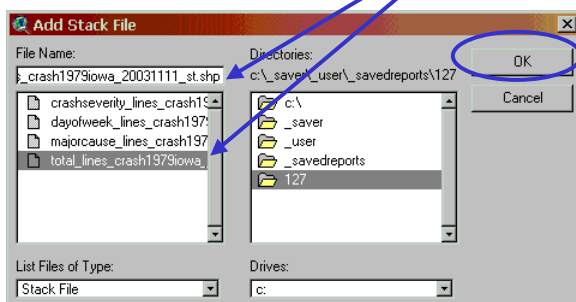
Click Add in the Stack Themes control panel.



Find the folder where the stacks are saved.



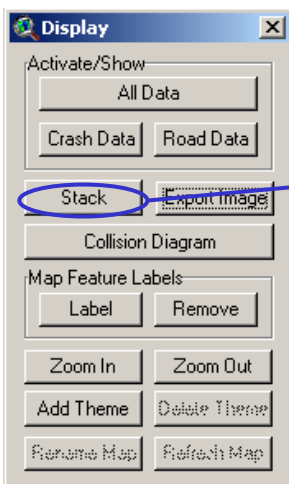
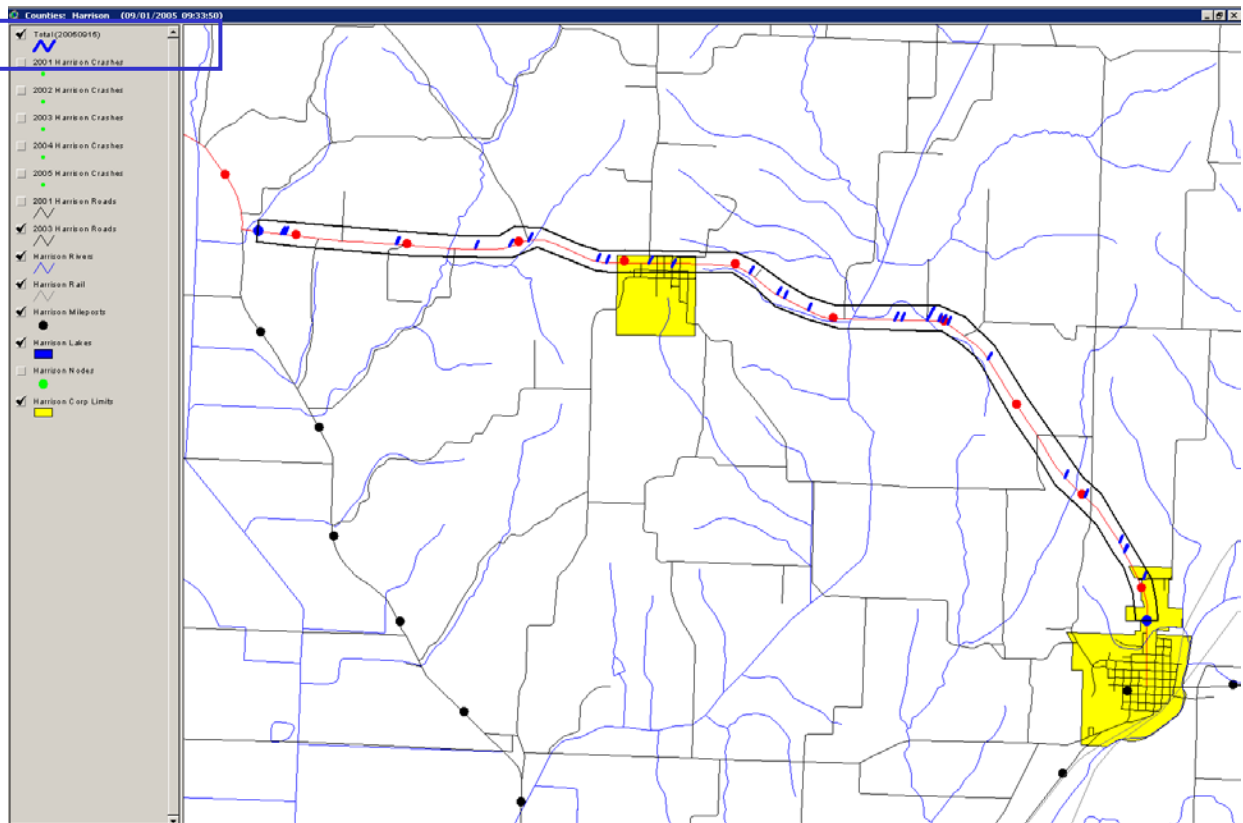
Select the stack(s) you would like to view.



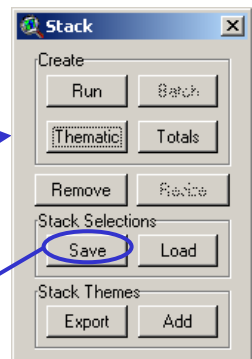
Click OK.

SAVER Example

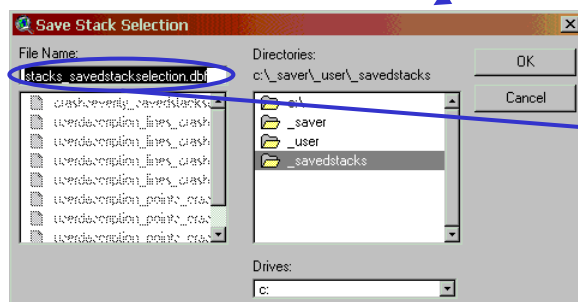
US 34, MP 4.33 to MP 20.41,
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To save the Stack Selection, click
Stack in the Display dialog panel.



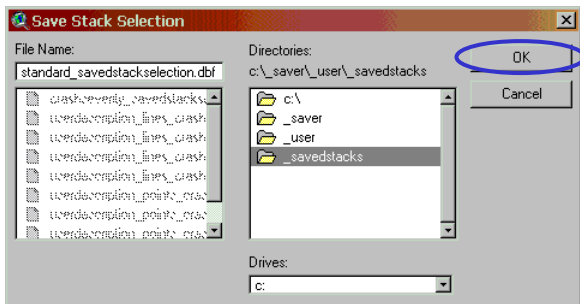
Click Save in the Stack Selections
control panel. This will bring up a
Save File dialog. Choose the
directory where you would like to
save the Stack Selection. You may
use the default if you wish.



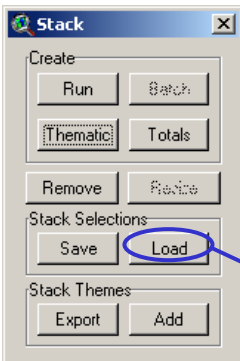
Give an appropriate name
to the Stack Selection.

SAVER Example

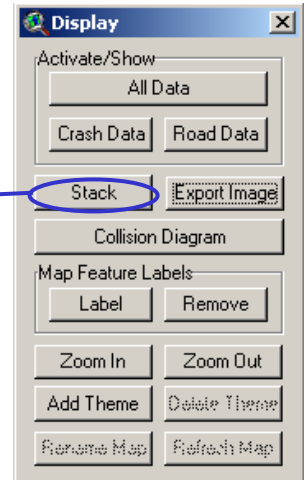
US 34, MP 4.33 to MP 20.41,
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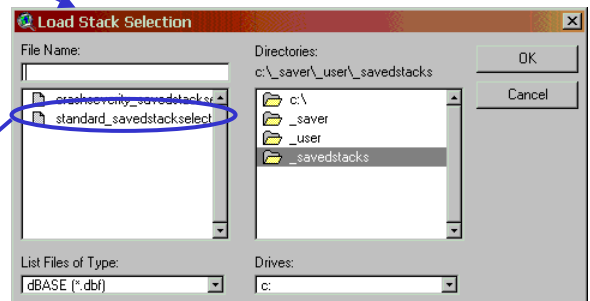
Click OK. This Stack Selection is now saved to use on future crash analysis.



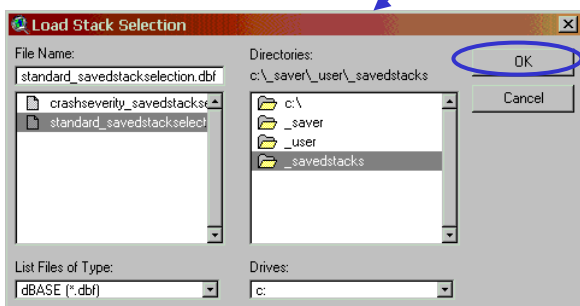
To load a saved Stack Selection, click Stack in the Display dialog panel.



Click Load in the Stack Selections control panel. This will bring up a Load File dialog. Navigate to the directory where you saved the Stack Selection.

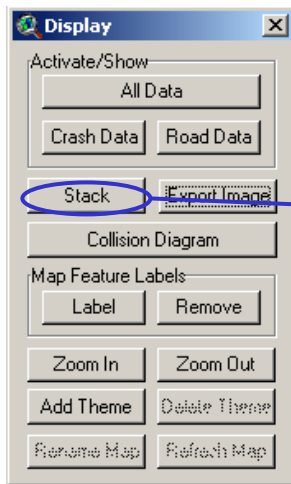


Select the Stack Selection that was previously saved.

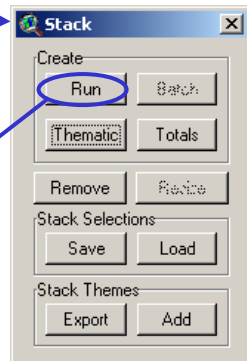


Click OK.

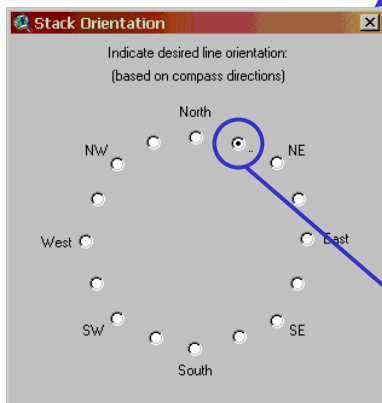
Make all the desired crash themes active.



Click Stack in the Display dialog panel.



Click Run in the Create Stack panel.



Select a stack orientation perpendicular (i.e., at right-angles) to the primary road direction...or as near as you can get to this as many roads have curves.

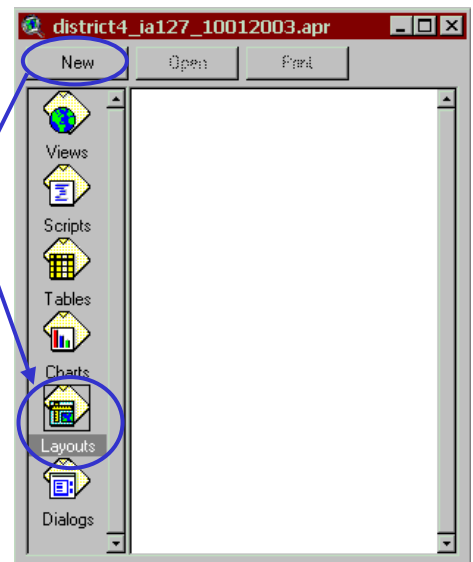
SAVER will then run and produce all of the stacks that are in the selected Stack Selection.

Layouts

Go to the ArcView Project Window.

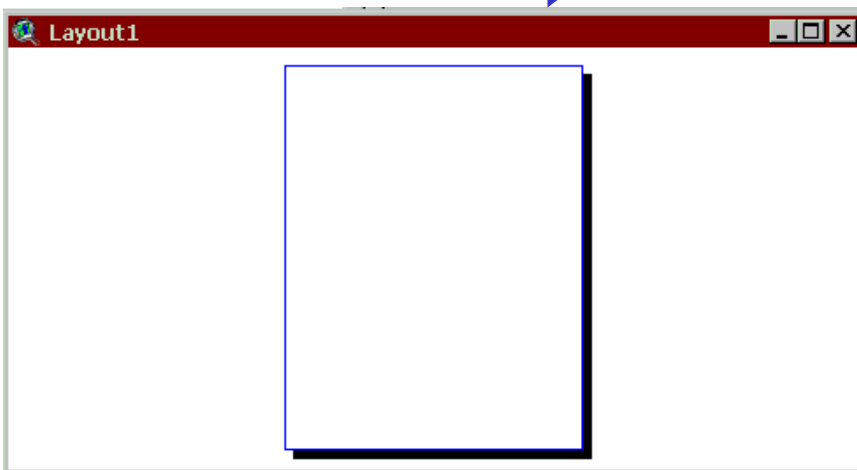


**Select Layouts
from the menu
on the left side.**



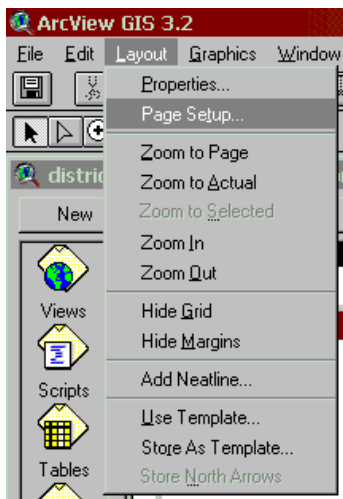
Click New.

This brings up a new layout in a new window. It is a good idea to make this window larger so that you can get a better idea of how things will look before printing them.

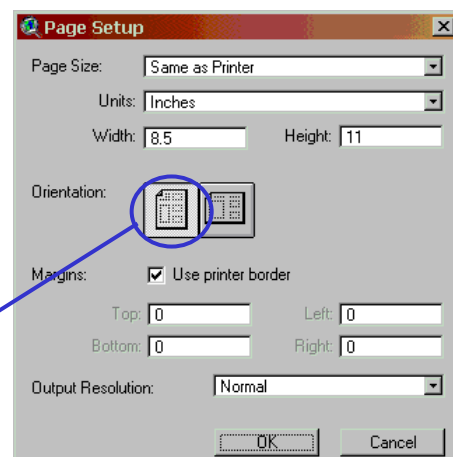


SAVER Example

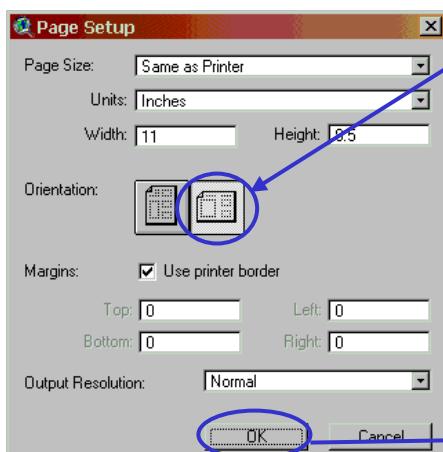
US 34, MP 4.33 to MP 20.41,
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Select Page Setup from
the Layout pull-down
menu.



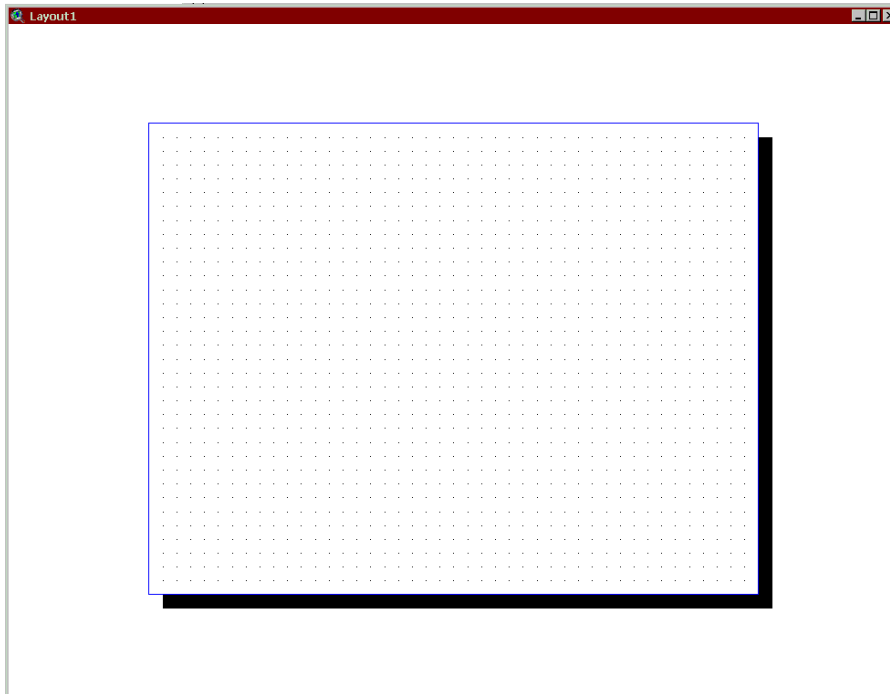
Switch the Orientation
from Portrait to
Landscape.



Click OK.

SAVER Example

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Select Zoom to Page tool button. This will zoom in so that the layout fills up the entire layout window.

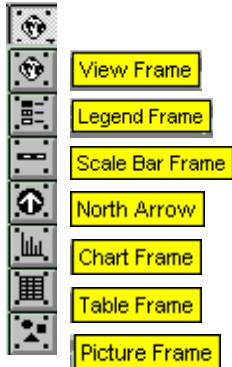


SAVER Example

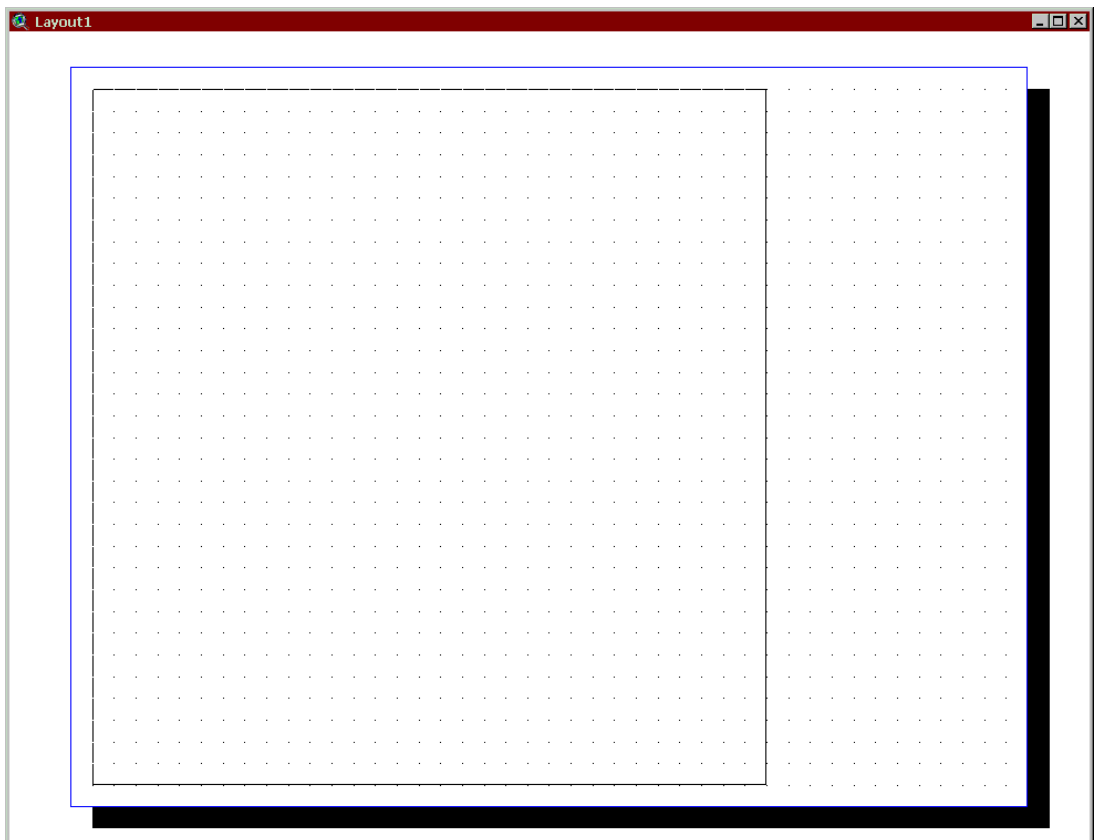
US 34, MP 4.33 to MP 20.41,
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Select the View Frame tool button. (Make sure the button is depressed.)



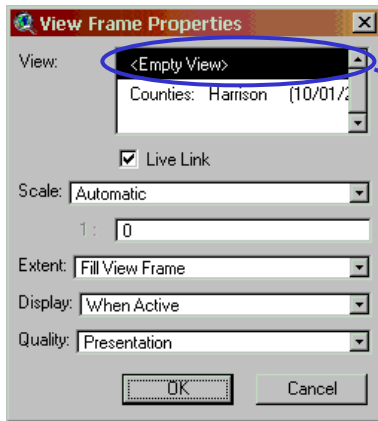
Click and drag a rectangle. This rectangle is where your previously created map will be on the page. It is probably a good idea to leave some space at the top or along one side as shown here for a title, legend, scale, and other necessary information.



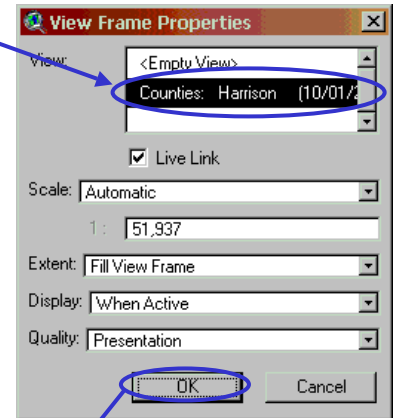
After you draw the rectangle, the View Frame Properties dialog box comes up.

SAVER Example

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Mills County, 2000-2004

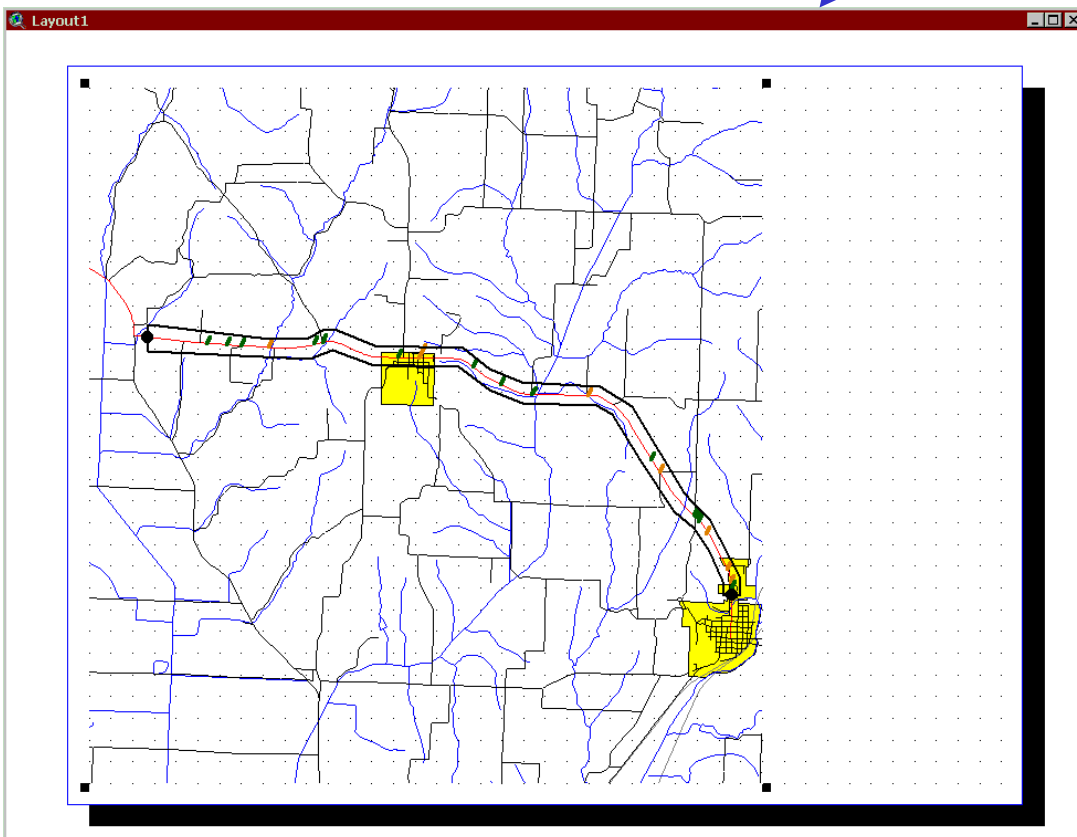


Click on the line that represents the project that you are working on.



Click OK.

The map then shows up in the previously created frame.



SAVER Example

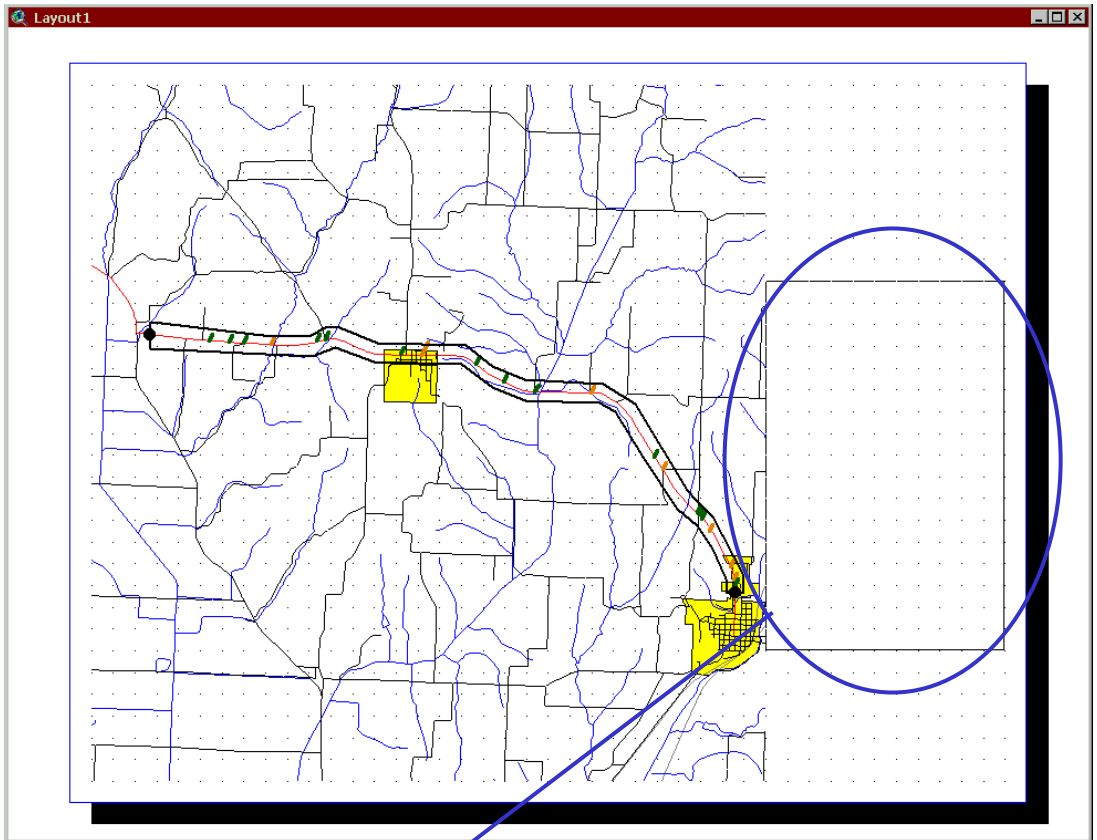
US 34, MP 4.33 to MP 20.41,
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Now we will add a Legend.

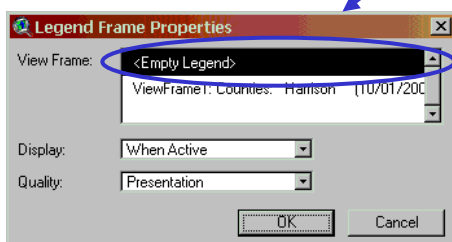


Select the Legend Frame tool
button. This is on the View Frame
button pull down menu. (Make
sure the button is depressed.)

Click and drag a rectangle where you
want your legend to be in the layout.



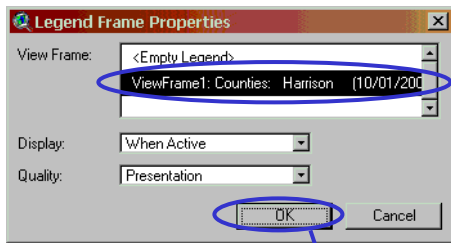
This brings up the Legend Frame
Properties dialog box.



Click on the line that represents
the project you are working on.

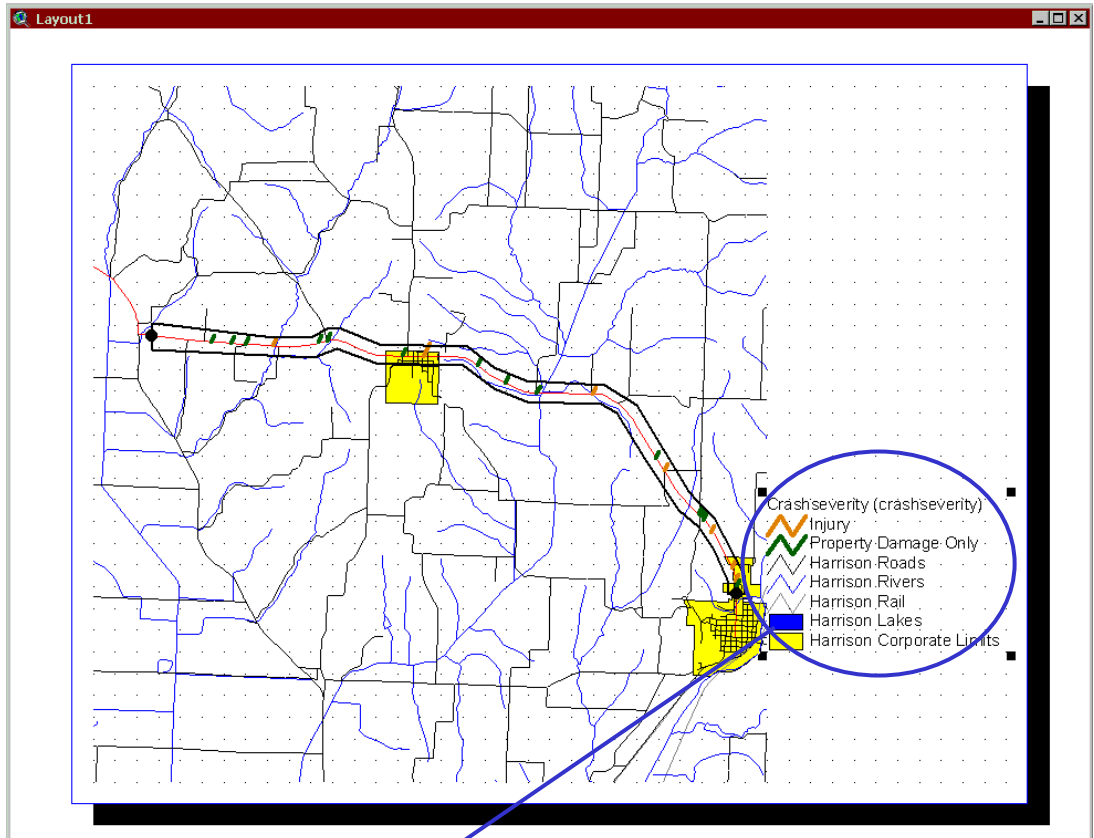
SAVER Example

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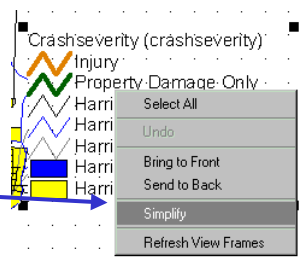
Click OK.

A legend will show up that includes all of the features that are displayed on the map. All of the themes that are listed along the left side of the screen in ArcView will be brought into the legend. This is probably more information than we need or want in our Legend.



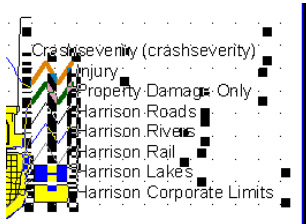
Select the arrow tool.

Right-click on the legend and select Simplify.

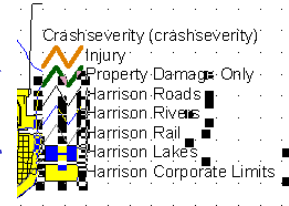


SAVER Example

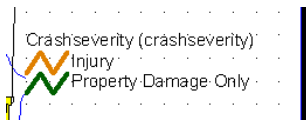
US 34, MP 4.33 to MP 20.41,
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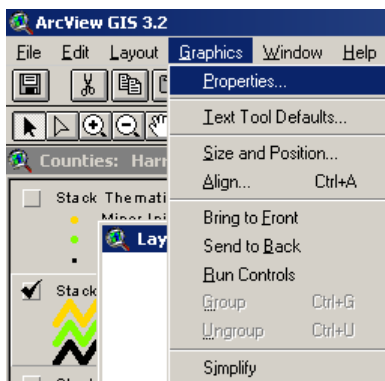
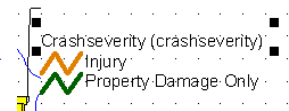
All of the items in the legend should be selected. You can then hold down the Shift-key and unselect any of the items that are not needed in the key.



Then delete the items still selected by pressing the Delete-key.

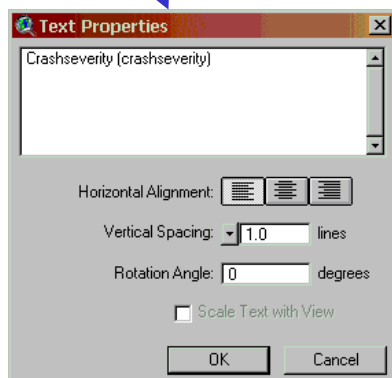


Then select the title for the legend.



Select Properties from the Graphics pull-down menu.

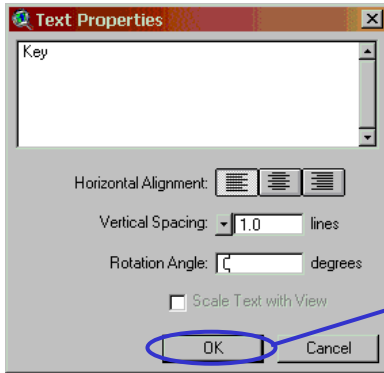
This brings up the Text Properties dialog box.



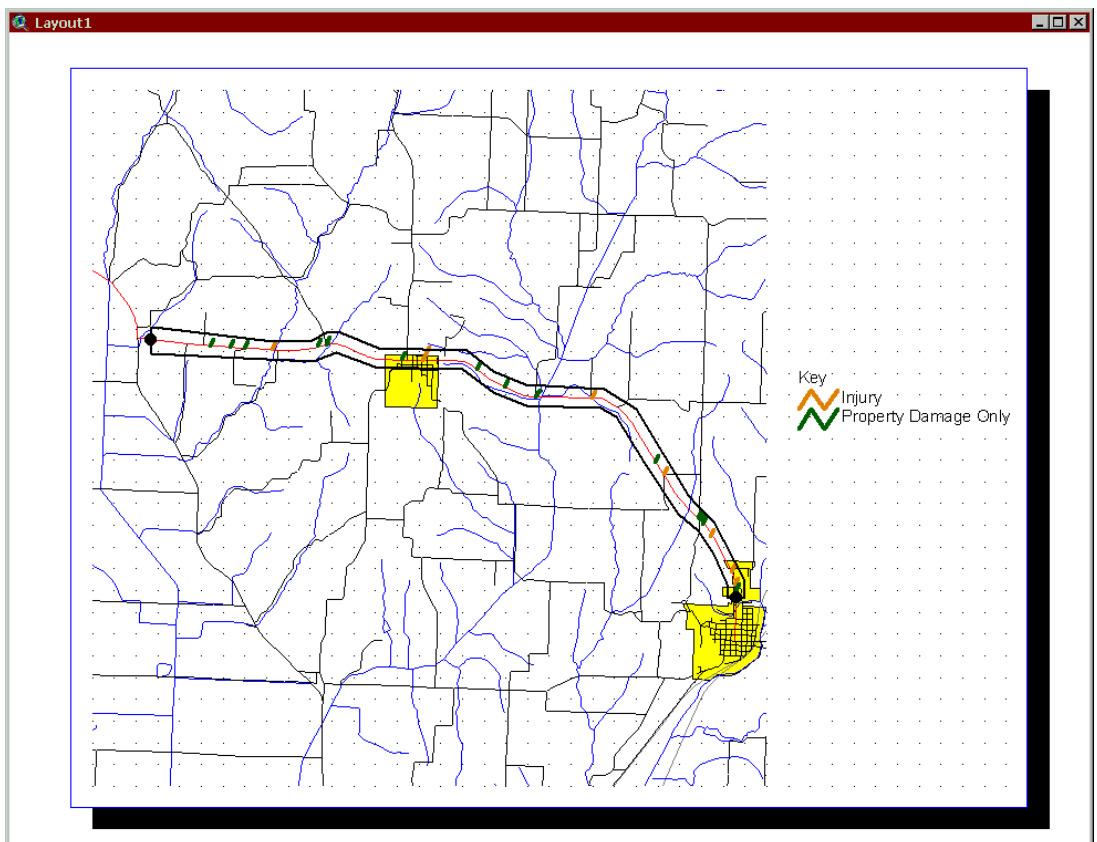
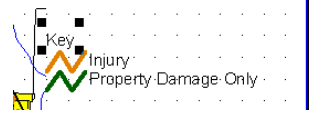
Change the title of the legend to something more appropriate such as "Key" or "Legend."

SAVER Example

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Click OK.



Drop-Shadow Text

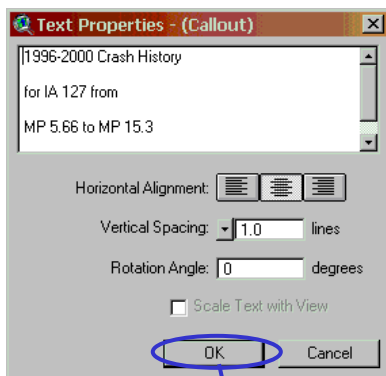
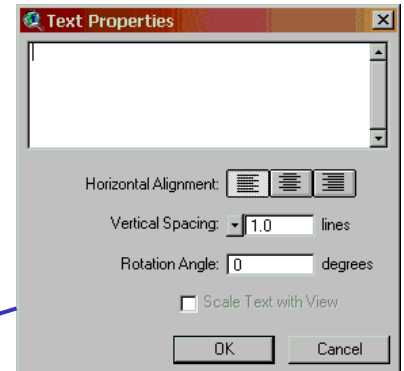
Now we will add a title to our layout.

Select the Drop-Shadow tool button. This is on the Text button pull down menu. (Make sure the button is depressed.)

SAVER Example

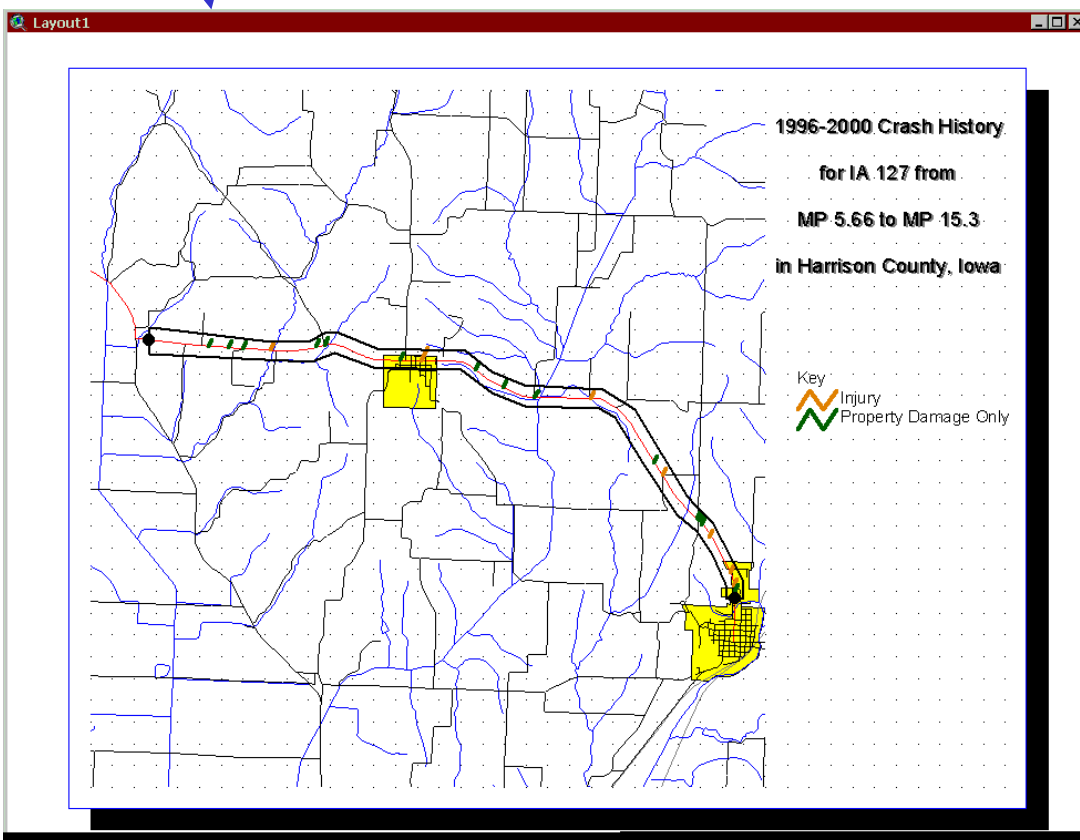
US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004

Click on the layout where you want the title of the layout. Location is not real important as it can be moved later if necessary using the pointer tool. This will bring up the Text Properties dialog box.



Type in an appropriate title for the layout. The information from the Feature Count Report is okay. This can also be formatted by changing the horizontal alignment or the vertical spacing.

Click OK.



SAVER Example

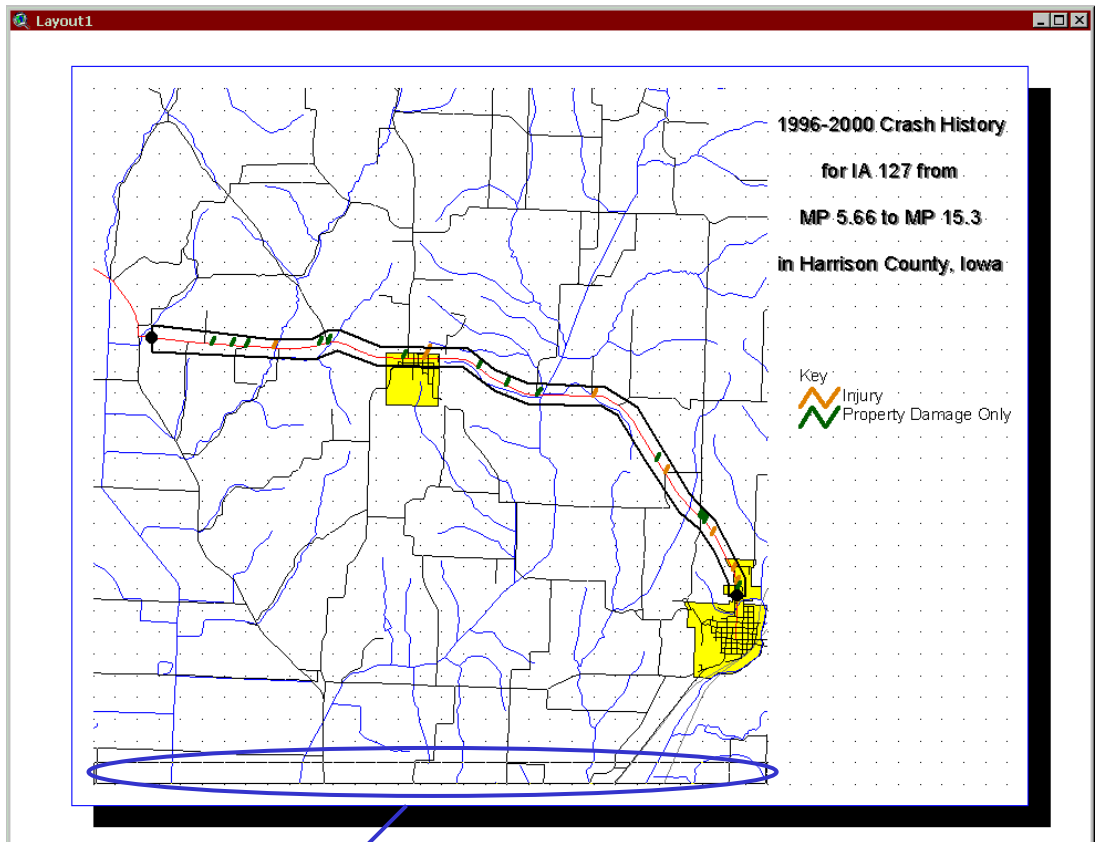
US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004

Now we will add a scale bar to our layout.

Select the Scale Bar Frame tool button.
This is on the same button pull down
menu as the View Frame and Legend
Frame buttons. (Make sure the button
is depressed.)



Scale Bar Frame



Click and drag a rectangle where you would
like to place the Scale Bar. This will bring
up the Scale Bar Properties dialog box.

Scale Bar Properties

View Frame: <Empty Scalebar>
ViewFrame1: Counties: Harrison (10/01/200)

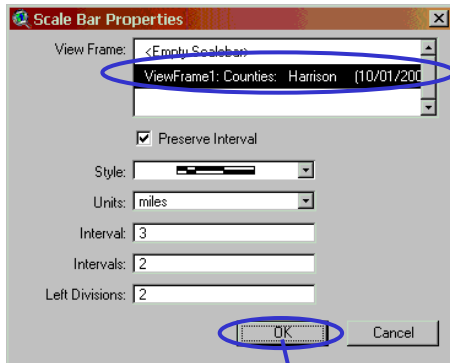
☒ Preserve Interval

Style: [Scale Bar Icon]
Units: miles
Interval: 1
Intervals: 2
Left Divisions: 2

OK Cancel

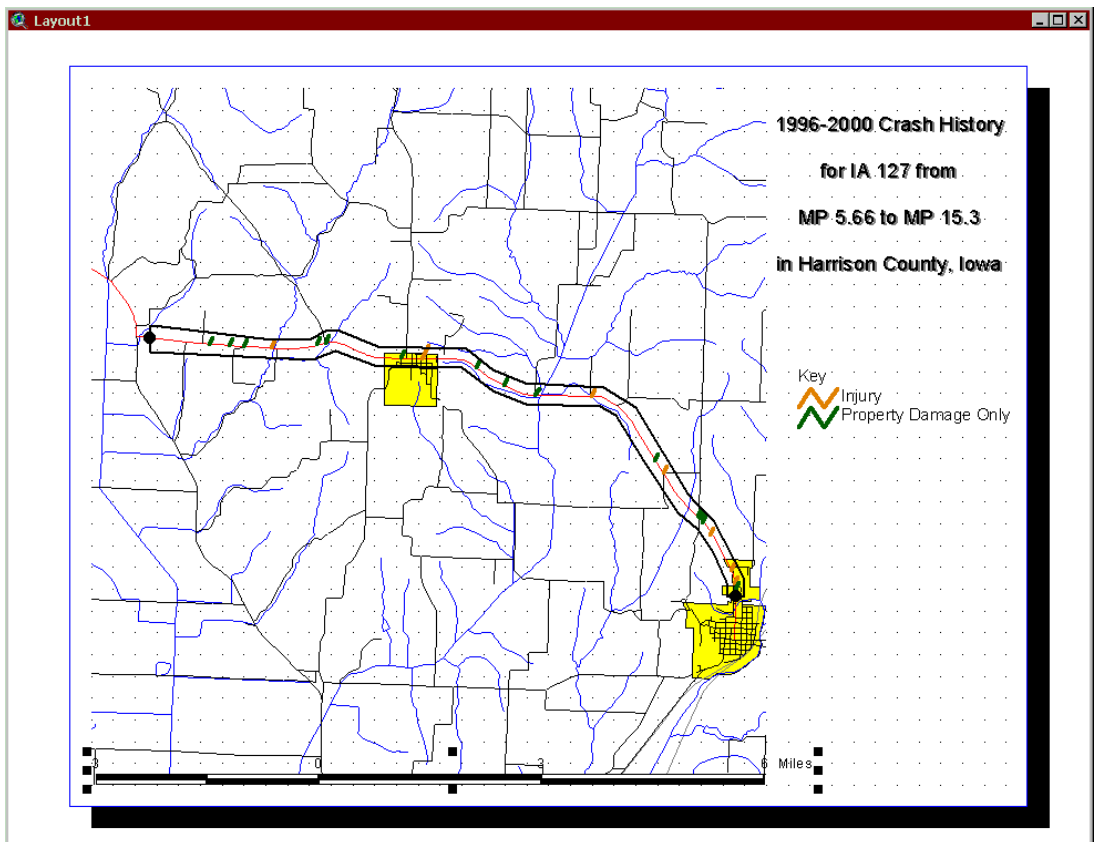
SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004



Click on the line that represents the project you are working on. Pick the style of scale bar that you want and change any options as necessary to fit your needs.

Click OK.



SAVER Example

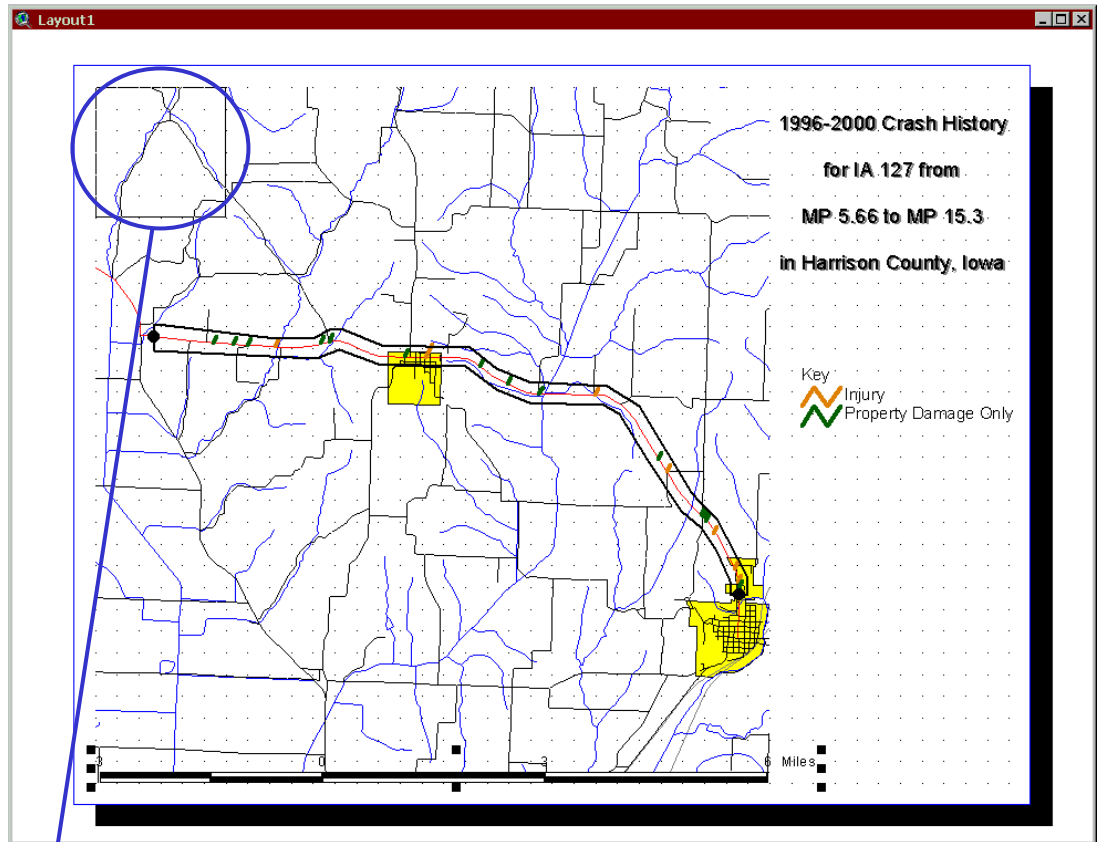
US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004

Now we will add a North Arrow to our layout.

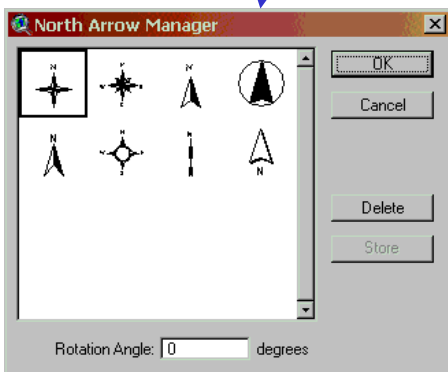
Select the North Arrow tool button.
This is on the same button pull down
menu as the View Frame and Legend
Frame buttons. (Make sure the button
is depressed.)



North Arrow

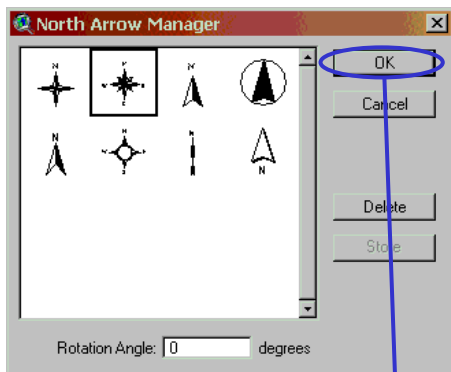


Click and drag a rectangle where you would
like to place the North Arrow. This will bring
up the North Arrow Properties dialog box.

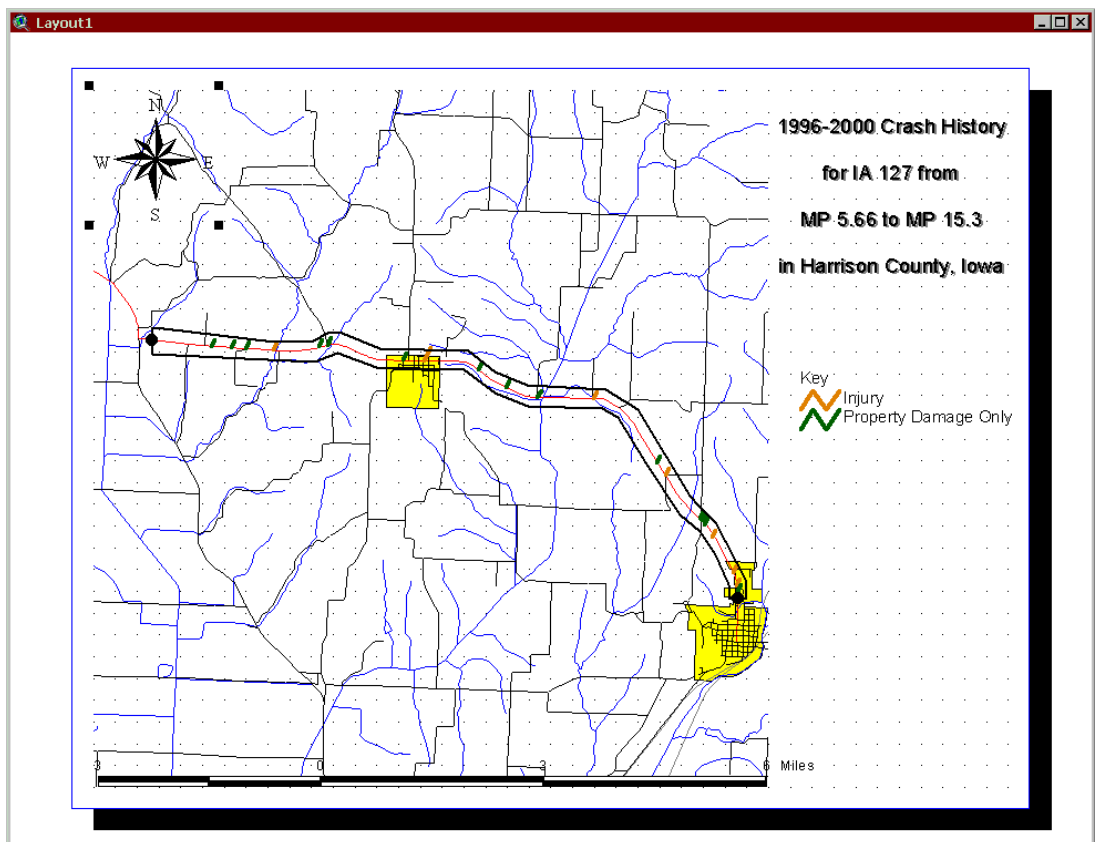


SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004



Select the North Arrow that
you want and click OK.



SAVER Example

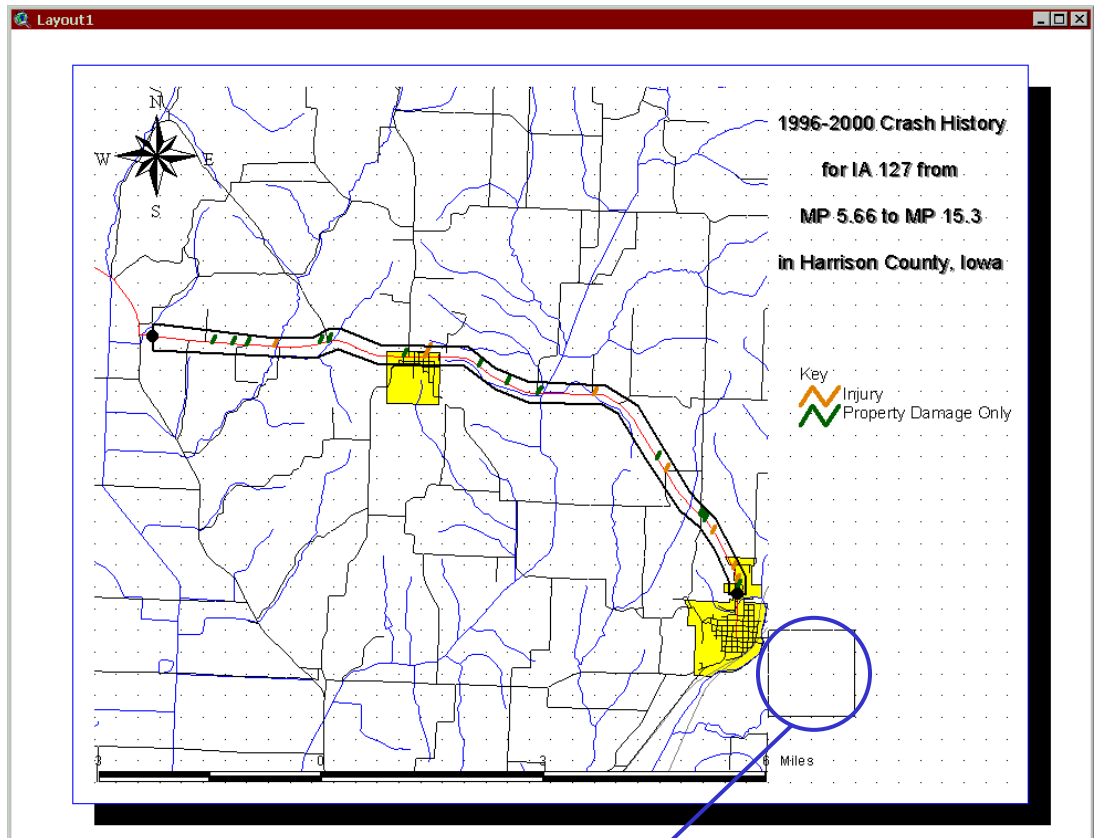
US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004

Now a DOT graphic will be added to the layout. This is optional and any graphic that you desire could be inserted instead.

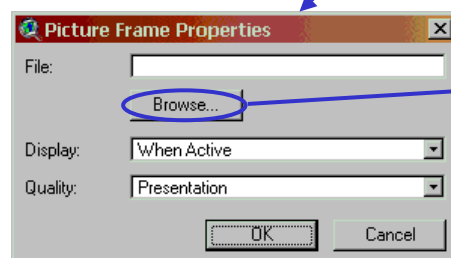
Select the Picture Frame tool button.
This is on the same button pull down menu as the View Frame and Legend Frame buttons. (Make sure the button is depressed.)



Picture Frame



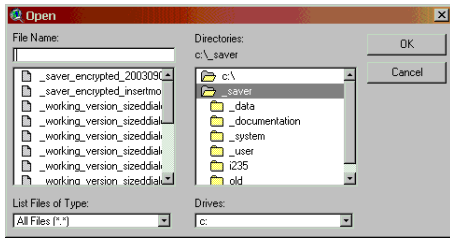
Click and drag a rectangle where you would like to place the graphic. This will bring up the Picture Frame Properties dialog box.



Click Browse.

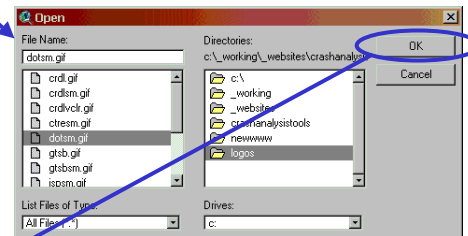
SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004



This brings up a dialog box.

Navigate to the folder where
the logo is located at.

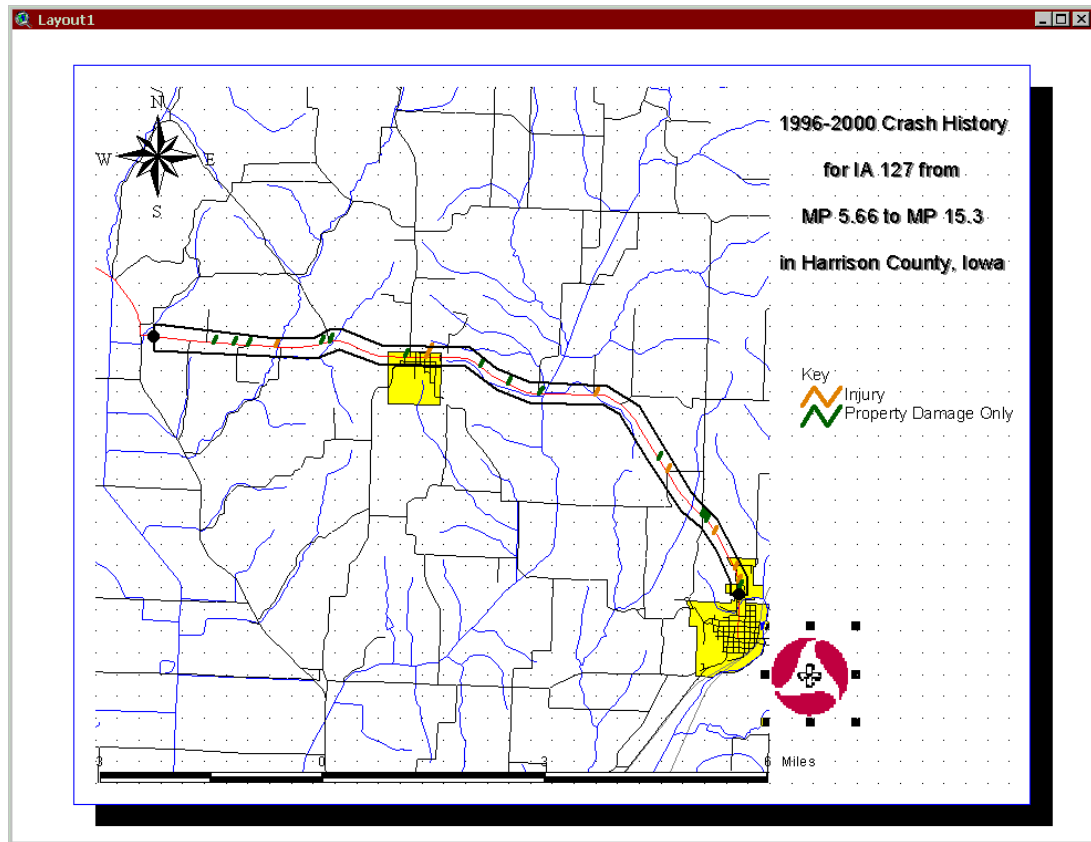



Click OK.



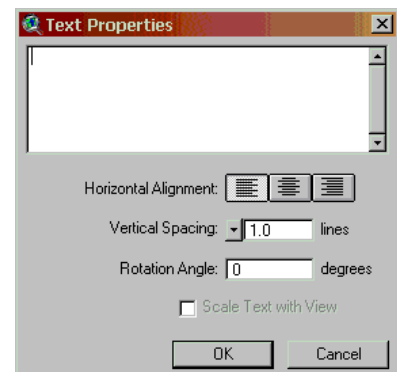
Click OK.

Now we will add some information about
who made the map and the date.



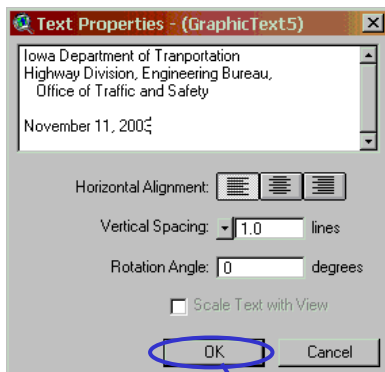
 **Text** Select the Text tool button. (Make
sure the button is depressed.)

Click on the layout where you would like
the text to go. The exact location is not
important as it can be moved later if
necessary using the pointer tool. This will
bring up the Text Properties dialog box.



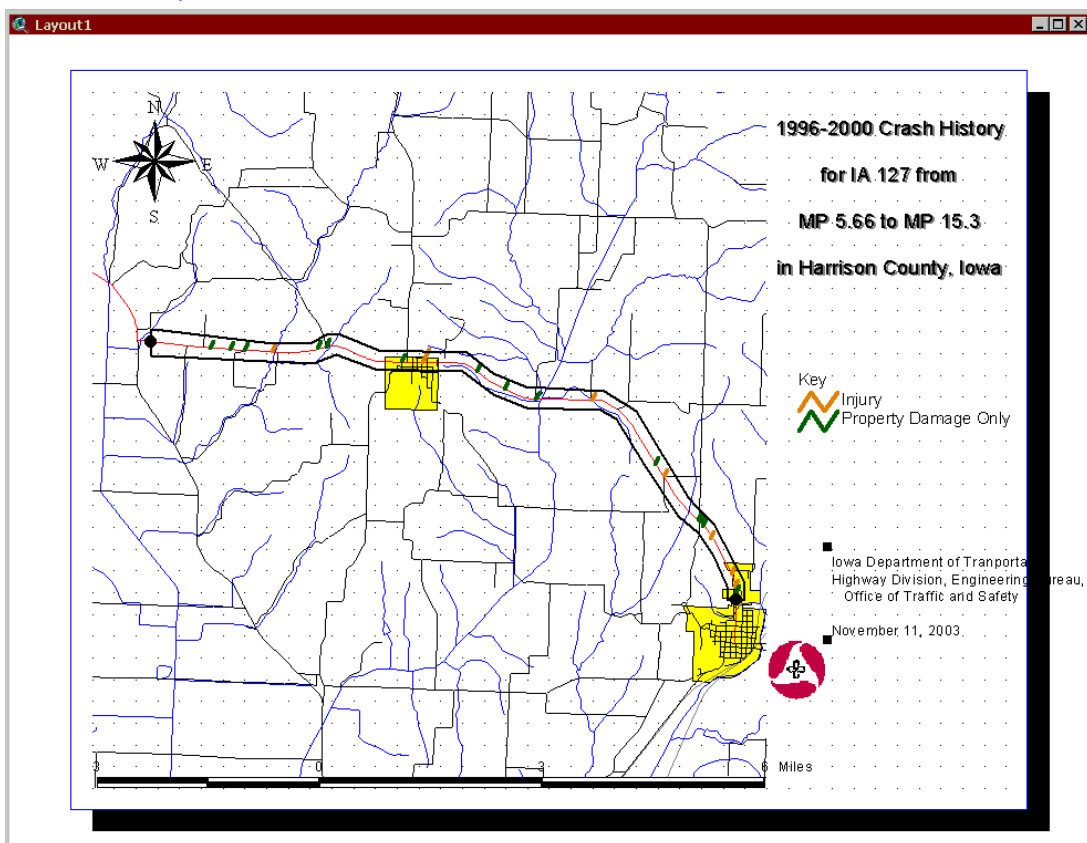
SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004



Type the text into the dialog box.
Your name, office, and the date the
map was created are some suggestions
for what to include. You can put in
more or less information as you see fit.

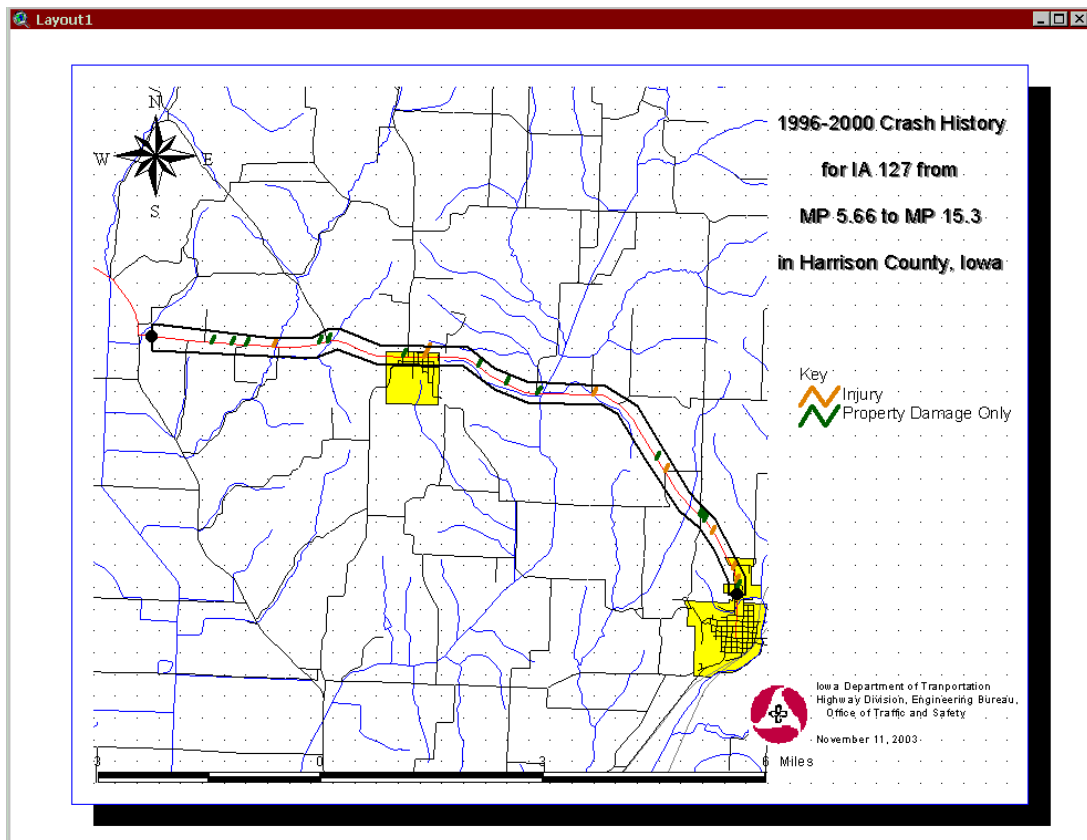
Click OK.



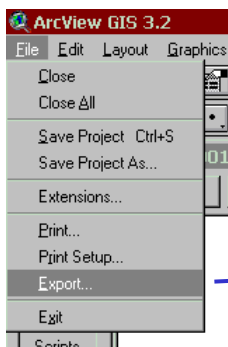
SAVER Example

US 34, MP 4.33 to MP 20.41,
Mills County, 2000-2004

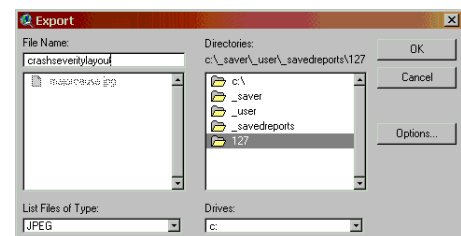
The layout is now complete with all of the necessary information. This could be printed from Arcview or exported to use in a presentation.



To export the image select Export from the Graphics pull-down menu.



This brings up the Export dialog box. Navigate to the location where you would like to save the image. You can also pick what format you would like to save the image as. Most often, JPEG images are small in file size so are relatively easy to transfer but they also often have sufficient image quality. The JPEG choice is at the bottom of the choices. Use whatever you wish, however.



Go back to page 11 and repeat for the second segment of roadway.